-08-2001-33
POPLAR OIL FIELDS

Release after redaction
(PII)

SDWA-08-2001-33
EAST POPLAR OIL FIELDS

Release after redaction
(PII)

DOCKET #:	SDWA-08-2001-33
CASE NAME	EAST POPLAR OIL FIELDS
EPA ATTORNEY	Jim Eppers
ADMINISTRATIVE LAW JUDGE	
PRESIDING OFFICER	

Date of Document	Description of Document
9/20/2001	EMERGENCY ADMINISTRATIVE ORDER
10/3/2001	FIRST AMENDED ADMINISTRATIVE ORDER
2/25/2003	NOTICE OF PROPOSED WITHDRAWAL OF PARTY
7/20/2004	SETTLEMENT AGREEMENT WITH CONDITIONAL RELEASE OF REPONDENT MARATHON

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2004 JUL 20 PM 1:40

EPA REGION VIII
HEARING CLERK

IN THE MATTER OF: Marathon Oil Company, Murphy Exploration and Production Co., Pioneer Natural Resources USA, Inc., and Samson Hydrocarbons Co., Respondents. East Poplar Oil Field Fort Peck Indian Reservation Montana Proceedings under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. §300g-i(a)	Docket No. **SDWA-8-99-68** **SDWA-08-2001-33** **Settlement Agreement with Conditional Release of Respondent Marathon**

WHEREAS, the United States Environmental Protection Agency, Region 8 ("EPA") issued two unilateral Emergency Administrative Orders (each an "EAO" and collectively the "EAOs") under Section 1431(a) of the Safe Drinking Water Act ("SDWA"), docket numbers SDWA-8-99-68 and SDWA-08-2001-33, as amended, concerning contamination of an underground source of drinking water ("USDW") in the East Poplar Oil Field ("Oil Field") on the Fort Peck Indian Reservation in northeastern Montana;

WHEREAS, Marathon Oil Company ("Marathon") was a Respondent to the EAOs based on alleged activities of Marathon's predecessor, TXO Production Corporation (referred to herein collectively with Marathon as "Marathon");

WHEREAS, Marathon filed a Petition for Review of First Amended Administrative Emergency Order, Docket No. SDWA-08-2001-33 ("Petition for Review") in the United States Court of Appeals for the Tenth Circuit;

WHEREAS, the Petition for Review is now pending in the Tenth Circuit;

NOW THEREFORE, EPA and Marathon have entered into this Settlement Agreement with Conditional Release of Respondent Marathon ("Settlement Agreement") and agree as follows:

1. Based on information presented to EPA by Marathon detailing the results of investigations it conducted related to contamination of the USDW at the Oil Field, EPA has determined that Marathon should be released from the EAOs.

2. EPA hereby releases Marathon from the EAOs.

3. If, after execution of this Settlement Agreement, EPA receives new or additional information regarding contamination of the USDW at the Oil Field indicating it would be appropriate to take administrative or judicial action against Marathon under section 1431 of the Safe Drinking Water Act or any other applicable provision of law, EPA hereby reserves its right to do so.

4. Within ten (10) business days after issuance and execution of this Settlement Agreement, Marathon will move to dismiss with prejudice its Petition for Review.

5. This Settlement Agreement does not constitute a waiver, suspension, or modification of the requirements of any federal or state statute, regulation, or condition of any permit issued thereunder, including the requirements of the SDWA, which remain in full force and effect.

6. EPA and Marathon agree to bear their own costs and attorneys fees in connection

with this matter, including all administrative and judicial proceedings to date.

7. Each of the undersigned representatives of the parties to this Settlement Agreement certifies that he or she is fully authorized by the party represented to execute and legally bind the party to the terms and conditions of the Settlement Agreement.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Elisabeth Evans Date: 7/20, 2004
ELISABETH EVANS, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Michael T. Risner for Date: 7/20, 2004
DAVID J. JANIK, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004
DAVID A. CARSON
United States Department of Justice
Environment and Natural Resources Division
Suite 945 – North Tower
999 18th Street
Denver, Colorado 80202
(303) 388-7362

FOR MARATHON OIL COMPANY:

Edward A. Strenkowski

Date: July 12, 2004

EDWARD A. STRENKOWSKI, Esq.
Marathon Oil Company
5555 San Felipe Road
Houston, Texas 77352-3128

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

03 FEB 25 AM 10:02

IN THE MATTER OF	
	Docket Nos. SDWA-08-2001-33 & SDWA-08-99-68
Marathon Oil Company,	
Murphy Exploration and Production Company,	
Pioneer Natural Resources USA Incorporated, and	**NOTICE OF PROPOSED WITHDRAWAL OF PARTY**
Samson Hydrocarbons Company,	
Respondents	
East Poplar Oil Field Fort Peck Indian Reservation Montana	
Proceedings under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. §300g-i(a)	

DESCRIPTION

This action proposes to withdraw Marathon Oil Company ("Marathon") as a Respondent named in the above-referenced two Emergency Administrative Orders, issued by the United States Environmental Protection Agency, Region 8 ("EPA"). This proposed decision is based upon information made available to EPA after it had issued these Orders. That information includes groundwater

sample results and predictive modeling demonstrating a low likelihood that Marathon's former activities in the East Poplar Oil Field contributed to a threat to an underground source of drinking water ("USDW") that may present an imminent and substantial endangerment to the health of persons in that part of the East Poplar Oil Field addressed by the above-referenced Emergency Orders. This proposed decision would not prevent EPA from reinstating Marathon as a Respondent should yet additional new information support reinstatement.

BACKGROUND

1. The East Poplar Oil Field lies approximately 8 miles northeast of the City of Poplar, Montana, and wholly within the Fort Peck Indian Reservation. The East Poplar Oil Field was first discovered in 1952 and has been in continuous operation since. EPA has alleged and continues to allege that oil production companies conducting oil field activities in and around the East Poplar Oil Field have caused the groundwater to become contaminated over several square miles and the contamination caused a threat to an underground source of drinking water ("USDW") that may present an imminent and substantial endangerment to the health of persons.

2. Marathon Oil Company is an Ohio corporation and therefore a "person" within the meaning of 40 CFR §141.2 and §144.2 and

Section 1401(12) of the Act, 42 U.S.C. §300f(12). TXO Production Corporation ("TXO") a Delaware corporation merged with Marathon Oil Company. TXO Production Corporation was a trade name for Texas Oil & Gas Corporation, a Delaware corporation.

3. TXO owned and/or operated oil production facilities, including but not limited to an oil production well, a produced brine disposal well, production and waste pits, storage tanks, oil/water separators, and distribution pipelines and pumping facilities, in portions of the East Poplar Oil Field located within Township 28 North, Range 51 East, north half of Section 22. This location within the East Poplar Oil Field is known as the Buckles lease. TXO commenced operations at the Buckles lease in 1981 and ceased operations in 1984.

4. On September 30, 1999, EPA issued an Emergency Administrative Order (Docket No. SDWA-08-99-68), pursuant to the Safe Drinking Water Act, Section 1431. That Order requires, among other things, that bottled water be provided to several home sites in and around the East Poplar Oil Field. Marathon, the successor to TXO, was one of several Respondents named in that Order. That Order has been twice amended since first issued, once on November 5, 1999, and again on November 30, 2000.

5. On September 20, 2001, EPA issued another Emergency Administrative Order (Docket No. SDWA-08-2001-33), pursuant to the Safe Drinking Water Act, Section 1431. That Order requires, among other things, that several home sites in and around the East Poplar Oil Field have full replacement drinking water at their homes, and that an area located north and northeast of Poplar be studied to assess and quantify the threat the contaminated groundwater in and around the East Poplar Oil Field poses to the City of Poplar's three wells, which are used to supply public drinking water. Marathon, the successor to TXO, is one of several Respondents named in that Order.

NEW INFORMATION

6. In early September 2002, Marathon drilled two bore holes, each located within 500 feet of the Buckles lease location. The two bore holes were each drilled through the Quaternary-aged deposits to a depth of 67 feet. The two soil borings were named by Marathon TXOSB-1 and TXOSB-2 respectively.

7. During the drilling of TXOSB-1, three water zones were encountered (40-45 feet depth, 48-53 feet depth, and 55-60 feet depth). The bottom of the Quaternary-aged deposits was encountered at approximately 64 feet. At each water zone, groundwater was sampled and analyzed in the field for conductivity, temperature and pH. Samples were collected

from each water zone and analyzed at two separate laboratories for chloride, bicarbonate, carbonate, sulfate, sodium, potassium, calcium, magnesium, total dissolved solids, as well as benzene, ethylbenzene, toluene, and xylenes, commonly referred to as "BTEX."

8. During the drilling of TXOSB-2, two water zones were encountered (45-50 feet depth, and 55-60 feet depth). The bottom of the Quaternary-aged deposits was encountered at approximately 63 feet. At each water zone, groundwater was sampled and analyzed in the field for conductivity, temperature and pH. Samples were collected from each water zone and analyzed at two separate laboratories for chloride, bicarbonate, carbonate, sulfate, sodium, potassium, calcium, magnesium, total dissolved solids, and BTEX.

9. Although values of total dissolved solids range from approximately 3200 milligrams per liter ("mg/l") to nearly 4000 mg/l, BTEX constituents were not detected, and the inorganic elements are dominated by the sulfate ion, rather than the chloride ion typically associated with oil field waste water.

10. In addition to the groundwater samples collected and analyzed, Marathon utilized a two-dimensional model to predict downward transport of the chloride ion from the surface to the uppermost water zone in order to simulate

downward infiltration of surface spillage that may have occurred. Marathon used Hydrus-2D software, version 2.0 (1999) for this exercise. The model assumes an initial chloride concentration of 50,000 mg/l, based on analytical test results from waste water taken from the Buckles A#1 former oil production well. The model also assumes the presence of 33 feet of silty clay soil between the surface and the uppermost water zone. The drillers logs from the soil borings TXOSB-1 and TXOSB-2 describe an assemblage of sandy clay, clay, silt, and sandy silt from surface to approximately 40 feet depth. The model was repeated three different times, representing simulations of spilled waste water residing on the surface, and thus representing a constant downward infiltration source, for three different amounts of time: 30, 60 and 365 days. In each case, the simulation of downward vertical transport persists for 120 years following cessation of the simulated spill. For the three different spill residence times at the surface (30, 60 and 365 days), the model predicts that, after 120 years, at the base of the 33 feet of silty clay, the chloride concentration, starting at 50,000 mg/l, will have been reduced to 92, 278, and 1140 mg/l respectively. Modeling results predict that if there were a waste water spill at the surface releasing 50,000 mg/l chloride brine for a

period between 30 and 365 days, after 120 years the chloride concentration in the downward-moving plume at 33 feet depth will have been reduced to between 92 and 1140 mg/l.

11. Measured values of chloride in the sampled ground water at the two soil boring locations range from 69 to 95 mg/l.

12. Based on these reported results of sampled ground water and vertical transport modeling, EPA believes the oil field activities conducted by Marathon's predecessor, TXO, at the Buckles lease is unlikely to have caused or contributed to a threat to a USDW that may present an imminent and substantial endangerment to the health of persons in that part of the East Poplar Oil Field addressed by the above-referenced Emergency Orders.

PROPOSED ACTION

13. EPA proposes to withdraw Marathon Oil Company as a named Respondent in the two Emergency Administrative Orders, Docket Nos. SDWA-08-99-68 and SDWA-08-2001-33.

PUBLIC NOTICE AND OPPORTUNITY FOR COMMENT

14. Anyone interested in this matter is invited to submit comments on EPA's proposed action. The public comment period for submitting comments ends March 31, 2003. EPA is not required to consider comments received after this date when making a final decision.

15. Copies of the documents supporting EPA's proposed action are

available for viewing at the following locations:

United States Environmental Protection Agency, Region 8
999 18th Street, Suite 300
Denver, Colorado 80202
(800) 227-8917; and

Fort Peck Community College Library
P.O. Box 398
Highway 2
Poplar, Montana 59255
(406) 768-5551, or (406) 768-5740.

If anyone wishes to view these documents at the EPA office in Denver, they should contact Nathan Wiser in advance at (303) 312-6211, or (800) 227-8917. Persons wishing to view the documents at the Fort Peck Community College Library are encouraged to contact Anita Scheetz in advance at the telephone numbers referenced above.

REINSTATEMENT

16. If, after a final determination is made to withdraw Marathon Oil Company as a Respondent in the two Emergency Administrative Orders referenced above, additional information indicates that Marathon should in fact still be a named Respondent, EPA may issue such Orders or take such actions as deemed necessary to reinstate Marathon as a Respondent.

Signed this 25th day of February, 2003.

Elisabeth Evans

Elisabeth Evans
Director
Technical Enforcement Program

David J. Janik

David J. Janik
Supervisory Enforcement
Attorney

or

Michael T. Risner
Director
Legal Enforcement Program

CERTIFICATE OF SERVICE
Docket No. SDWA-08-99-68 and SDWA-08-2001-33

I hereby certify that the original and a true copy of the Notice of Proposed Withdrawal of Party in the above-referenced Emergency Administrative Orders were hand-carried to the Regional Hearing Clerk, EPA Region VIII, 999 18th Street, Denver, Colorado, and that a true copy of the same was sent via Certified Mail Return Receipt Requested mail to:

Elizabeth Mack, for Samson Hydrocarbons Company
Locke, Liddell & Sapp
2200 Ross Avenue, Suite 2200
Dallas, Texas 75201

John Fognani, for Marathon Oil Company
Fognani, Guibord, Homsy & Roberts
555 17th Street, 26th Floor
Denver, Colorado 80202

Scott DuBoff, for Murphy Exploration and Production Company
Wright & Talisman
1200 G Street, N.W. Suite 600
Washington, DC 20005-3802

Steve Leifer, for Pioneer Natural Resources USA, Inc.
Baker Botts LLP
The Warner
1299 Pennsylvania Avenue, N.W.
Washington, DC 20004-2400

Dated: 2|25|03

By: Judith McTernan
Judith McTernan

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

01 OCT -3 PM 12:52

EPA REGION VIII
HEARING CLERK

IN THE MATTER OF	
	Docket No. SDWA-08-2001-33
Marathon Oil Company,	
Murphy Exploration and Production Company,	
Pioneer Natural Resources USA Incorporated, and	**FIRST AMENDED EMERGENCY ADMINISTRATIVE ORDER**
Samson Hydrocarbons Company,	
Respondents	
East Poplar Oil Field Fort Peck Indian Reservation Montana	
Proceedings under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. §300g-i(a)	

DESCRIPTION

This Order amends the Emergency Administrative Order Docket No. SDWA-08-2001-33, which was first issued September 20, 2001. This amendment makes only the changes listed in the following paragraphs and makes no other changes to the existing Order. This amendment is made because Respondents have requested and have shown

a basis for modifying deadlines and deliverables which were required in the Order issued on September 20, 2001. In addition, at the request of counsel for Samson Investment Company, Samson Investment Company is removed without prejudice from the list of named Respondents.

The existing Order continues in full effect except for the changes set forth hereunder.

CHANGES TO ORDER DOCKET No. SDWA-08-2001-33

1. The caption of the Order issued on September 20, 2001 is changed to reflect the removal of Samson Investment Company as a Respondent. The caption of Order Docket No. SDWA-08-2001-33 will now appear as it does on the first page of this First Amended Emergency Administrative Order.

2. Section VIII, Paragraph 81 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph:

"Approval Process: For each PLAN requiring EPA approval under this Order, the following submission and approval process shall occur. (a) Respondents shall submit an initial draft of the Plan to EPA at the address in Paragraph 91 of this Order. (b) EPA shall, within 30 days of receipt of said Plan, either approve the Plan

or submit written comments on the Plan to Respondents. (c) Respondents, shall, within 30 days of receipt of EPA's comments on the Plan or approval of the Plan, address EPA's comments or implement the Plan accordingly. If a deadline passes due to EPA's failure to timely submit comments, Respondents shall not be held accountable for such time beyond the deadline accrued due to EPA's failure to timely submit comments. If a deadline passes due to Respondents' failure or refusal to address one or more EPA comment, as determined solely by EPA, Respondents shall be considered to be in violation of this Order. EPA shall not substitute a completely different PLAN of its own if an alternative PLAN, favored by Respondents has been submitted for approval and meets all requirements of this Order. Given the emergency nature of this case, if Respondents do not ultimately and in a timely fashion submit an approvable PLAN, EPA may issue a new Order, amend an existing Order, or take other actions necessary to abate the emergency issues identified in this Order".

3. Section VIII, Paragraph 82 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph (including Table 1):

"Respondents shall submit to EPA within 14 days of the effective date of this Order, a written proposal with an aggressive schedule for studying options to deliver complete replacement water to the homesites listed in Table 1 of this paragraph. The options studied shall be such that, when implemented, the homesites listed in Table 1 of this paragraph shall have water conveyed to them which meets all primary drinking water standards (40 C.F.R. Part 141, Subpart G) in the amount of at least 125 gallons per person residing at each homesite per day. Taking into consideration the emergency nature of this case, and stemming from Respondents' proposed schedule for studying options, Respondents shall submit to EPA at the address in Paragraph 91 a written DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN containing Respondents' favored option, the implementation of which shall convey water meeting all primary drinking water standards (40 C.F.R. Part 141, Subpart G) to the addresses in Table 1 in this paragraph. On a weekly basis after submission of the proposed schedule for studying options, Respondents shall provide updates to Nathan Wiser, by facsimile (303) 312-6409, which summarize progress made toward finalization of the DOMESTIC USE HOMESITE WATER

REPLACEMENT PLAN. The DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall include provisions that ensure that each homesite in Table 1 in this paragraph will have water delivered, for domestic use, directly to the piping in each home for at least five (5) years, such that all pipes in use inside the home shall convey this alternative water, including, as found, water pipes in the homes' kitchens, bathrooms, work rooms, utility rooms, laundry rooms, basements, and outside spigots. The DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall ensure that alternative water so delivered will be routed through the homes' water heater. Except as allowed for in Paragraph 83, the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall ensure that the yield of domestic use water at each home is, at a minimum, 125 gallons per person residing at each homesite per day. If the current residents at each homesite shown in Table 1 in the paragraph have changed, that shall not affect Respondents' obligation to deliver the replacement water. For at least five (5) years, while Respondents are implementing the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN, no homesite owner and/or resident shall be required to pay for any portion of this water replacement. Modifications extending

deadlines in this paragraph shall be permissible only with EPA written approval."

TABLE I

Current Resident	City	State	Residence Address	Sec	Twp	Rge
Kohl, Danny	Poplar	MT	[redacted]			
Lien, Birdell	Poplar	MT				
Zimmerman, Bill	Poplar	MT				
Abbott, Joe	Poplar	MT				
Kim, Audrey	Poplar	MT				
Kim, Michael	Poplar	MT				
Gray Hawk, Rachel	Poplar	MT				
Trottier, Tim & Donna	Poplar	MT				
Lockman, Lyle	Poplar	MT				
Four Bears, Charles	Poplar	MT				
Martell, Rene & Josi	Poplar	MT				
Ricker Sr., George & Helen	Poplar	MT				
Bleazard, Ross & Laura	Poplar	MT				
Whitmer, Warren & Donna	Poplar	MT				
Loegering, Mavis	Poplar	MT				
Kim Sr., Jesse	Poplar	MT				
Grandchamp, Denise	Poplar	MT				
Grainger, Trivian	Poplar	MT				
Grainger, Iva	Poplar	MT				
Ranf, Marie and Corne, Warren	Poplar	MT				

4. Section VIII, Paragraph 84 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph:

"Initial implementation of the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall occur within 30 days of

its final approval by EPA. Initial implementation, for the purpose of this paragraph, means that one homesite in Paragraph 82, Table 1 shall be fully equipped with domestic use replacement water. Final implementation of the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall occur within 90 days of its approval by EPA. Final implementation, for the purpose of this paragraph, means that all homesites in Paragraph 82, Table 1, have been fully equipped with domestic use replacement water. Final implementation also means that water is conveyed to the homesites in Paragraph 82, Table 1, at no cost to them. Modifications extending the schedule in this paragraph shall be permissible only with EPA written approval; furthermore, weather-related conditions precluding the timely implementation of the final EPA-approved PLAN shall automatically constitute a legitimate basis to extend this schedule. Subtractions from the list of homesites found in Paragraph 82, Table 1 shall be permissible only with EPA written approval. Additions to Paragraph 82, Table 1 shall take place at the discretion of EPA, upon learning that additional homesites found in and around the East Poplar Oil Field with private water supply wells drawing from the

Quaternary deposits aquifer have been or are likely to become contaminated with oil field brine and/or hydrocarbons associated with oil and gas production from the East Poplar Oil Field. Additions to the list of homesites found in Paragraph 82, Table 1 will take place as follows: (a) EPA shall write to Respondents with the name and location of the additional homesite(s). (b) Respondents shall, within 30 days receipt of EPA's written notice, ensure that the homesite(s) added shall have replacement water meeting the standards and in the abundance set forth in Paragraph 82."

5. Section VIII, Paragraph 85 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph (including Table 2):

"Respondents shall, within 14 days of the effective date of this Order, submit to EPA at the address in Paragraph 91 a written proposal with an aggressive schedule to study and assess the threat that the groundwater contamination in the East Poplar Oil Field poses to the City of Poplar's PWS wells. Taking into consideration the emergency nature of this case, and stemming from Respondents' proposed schedule for studying and assessing the threat to the City of

Poplar's PWS wells, Respondents shall submit to EPA at the address in Paragraph 91 for approval, a PWS WELL THREAT STUDY PLAN, the implementation of which shall assess the degree to which all public water supply (PWS) wells used by persons in and around the City of Poplar are threatened by migration of the contaminants at the East Poplar Oil Field. On a weekly basis after submission of the proposed schedule for studying and assessing the threat to the City of Poplar's PWS wells, Respondents shall provide updates to Nathan Wiser, by facsimile (303) 312-6409, which summarize progress made toward finalization of the PWS WELL THREAT STUDY PLAN. The PWS WELL THREAT STUDY PLAN shall include, at a minimum, the following elements: (a) electro-magnetic study, or other remote sensing methods, to identify and locate the leading edges of the contaminant plume closest to PWS wells in and around the City of Poplar, (b) groundwater samples, collected quarterly for a minimum of five (5) years, from either existing wells or newly drilled wells screened in the Quaternary deposits aquifer located between the contaminant plume leading edge as mapped by the USGS in 1997 (T28N, R51E, S28) and the City of Poplar, and (c) a calculation of the direction of groundwater flow in the area studied,

a calculation of the rate of groundwater movement in the area studied, and a calculated estimate of the amount of time that will pass before the first PWS well will become contaminated along with the name and location of that public water supply well. The electro-magnetic study or other remote sensing method employed shall be able to distinguish between contaminated and uncontaminated groundwater sufficiently precisely that contour lines can be drawn with the total dissolved solids content of the groundwater mapped in gross detail, distinguishing between uncontaminated, mildly contaminated, and very contaminated groundwater. Respondents shall submit a report of the electro-magnetic study or other remote sensing method employed to EPA at the address in Paragraph 91. This report shall include maps of the results, including contoured lines showing the leading edges of the plume and its closest approach to the City of Poplar. The number of groundwater monitoring wells to be used in the PWS WELL THREAT STUDY PLAN shall be a minimum of six (6) wells, with the final count, location, and depth to be approved by EPA. Analysis of samples collected from each groundwater monitoring well shall include, at a minimum, static water level, pH,

TDS, dissolved chloride, dissolved sodium, dissolved calcium, dissolved potassium, dissolved carbonate, dissolved bicarbonate, dissolved magnesium, dissolved sulfate, benzene, toluene, ethylbenzene and total xylenes. Methods used to analyze the samples shall meet or exceed the method detection limits specified in Paragraph 85, Table 2. While implementing the PWS WELL THREAT STUDY PLAN, Respondents shall submit to EPA at the address in Paragraph 91 the analytical results of samples collected at each groundwater monitoring well within 60 days of each sampling event, as well as a report discussing the results of sampling."

TABLE 2

Analyte Parameter	Method Detection Limit	Units
Static water level	0.1	foot
pH	0.1	pH unit
TDS	10	mg/l
Cl	10	mg/l
Na	10	mg/l
Mg	10	mg/l
K	10	mg/l
CO3	10	mg/l
HCO3	10	mg/l
SO4	10	mg/l
Ca	10	mg/l
Benzene	0.05	mg/l

Analyte Parameter	Method Detection Limit	Units
Toluene	0.05	mg/l
Ethylbenzene	0.05	mg/l
Total xylenes	0.05	mg/l

6. Section VIII, Paragraph 86 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph:

"Initial implementation of the PWS WELL THREAT STUDY shall occur within 30 days of its final approval by EPA. Initial implementation, for the purpose of this paragraph, means the electro-magnetic or other remote sensing technique shall have been initiated on the ground, with data collection underway, excluding groundwater monitoring. Intermediate implementation of the PWS WELL THREAT STUDY shall occur within 90 days of its final approval by EPA or by June 30, 2002, whichever comes earlier. Intermediate implementation, for the purpose of this paragraph, means that the complete collection of all electro-magnetic data or other remotely sensed data, and the first set of water samples from groundwater monitoring wells, shall be completed, with the data results submitted to EPA at the address in Paragraph 91. Final implementation of

the PWS WELL THREAT STUDY shall occur within five (5) years of its final approval by EPA or by June 30, 2007, whichever comes earlier. Final implementation, for the purpose of this paragraph, means that all intermediate implementation has occurred and at least five (5) years' worth of quarterly samples have been completed and submitted to EPA as well as a final report summarizing the results of all work done under the EPA-approved PWS WELL THREAT STUDY. Modifications extending the schedule in this paragraph shall be permissible only with EPA written approval; furthermore, weather-related conditions precluding the timely implementation of the final EPA-approved PLAN shall automatically constitute a legitimate basis to extend this schedule."

7. Section VIII, Paragraph 87(a) of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph:

"All groundwater monitoring sample results, groundwater monitoring wellbore descriptions, diagrams of groundwater monitoring wells, or maps of groundwater monitoring wells from locations in (1) T28N, R50E; (2) T29N, R50E; (3) T28N, R51E; (4) T29N, R51E; (5) T27N, R50E; and (6) T27N, R51E."

8. Section VIII, Paragraph 88 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph (including Table 3):

"Paragraph 88, Table 3 summarizes the requirements and schedule for the three actions set forth in Paragraphs 82 through 87."

TABLE 3

Paragraph No. Plan Name (Date First Deliverable Due)	Minimum Requirements	Implementation Schedule					
		Initial	Minimum Requirements	Intermediate	Minimum Requirements	Final	Minimum Requirements
Paragraph 82 Domestic Use Homesite Water Replacement Plan Proposed schedule to study options for water replacement due 14 days from effective date of this First Amended Order	•125 gallons per person per day per homesite, except if delivered in which case equilibrate water usage with water delivery; • Water meets all primary drinking water standards (40 C.F.R. Part 141, Subpart G); •Water effectively replaces all water in each home for five (5) years	30 days from EPA approval of Plan	At least one homesite has had its water completely replaced	Not applicable	Not applicable	90 days from EPA approval of Plan (except that water must be supplied for at least five (5) years	All homesites in Paragraph 82, Table 1 have had water completely replaced
Paragraph 85 PWS Well Threat Study Plan Proposed schedule to study and assess threat to City of Poplar's PWS well due 14 days from effective date of this First Amended Order	•Use electro-magnetic or other remote sensing method to detect contamination; •Electro-magnetic or other remote sensing method must be capable of distinguishing levels of contamination; •Minimum of six (6) groundwater monitoring wells; •Five (5) years of quarterly water samples from groundwater monitoring wells; •Calculation of groundwater movement direction, rate of movement, and time until nearest PWS well is impacted by contamination	30 days from EPA approval of Plan	Electro-magnetic or other remote sensing method underway with data being collected in the field, excluding groundwater monitoring	90 days from EPA approval of Plan or June 30, 2002, whichever is earlier	•All electro-magnetic or other remote sensing method data has been collected and a report submitted to EPA; •1 set of quarterly water samples has been collected from all groundwater monitoring wells in the Plan and submitted to EPA	Five (5) years from EPA approval of Plan or June 30, 2007, whichever is earlier	•All electro-magnetic or other remote sensing method data has been collected and a report submitted to EPA; •20 sets of quarterly water samples have been collected from all groundwater monitoring wells in the Plan and submitted to EPA with a final report
Paragraph 87 Document Submission Documents due 90 days from the effective date of this First Amended Order	•Existing groundwater monitoring results from areas specified •Seismic survey information specified •Well, tank, pit, pipeline data from areas specified	Not applicable	Not applicable	Not applicable	Not applicable	90 days from the effective date of this First Amended Order	Submit a single copy to EPA of each applicable record

8. Section IX, Paragraph 97 of the September 20, 2001, Order is deleted in its entirety and replaced by the following paragraph:

"The effective date of this First Amended Order shall be three (3) business days from the date of issuance, not including the day of issuance."

Issued this 3RD day of OCTOBER, 2001.

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
Office of Enforcement, Compliance,
and Environmental Justice
United States Environmental Protection Agency,
Region 8

Michael T. Risner, Director
David J. Janik, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance,
and Environmental Justice
United States Environmental Protection Agency,
Region 8

CERTIFICATE OF SERVICE
Docket No. SDWA-08-2001-33

I hereby certify that the original and a true copy of this First Amended Emergency Administrative Order was hand-carried to the Regional Hearing Clerk, EPA Region 8, 999 18th Street, Denver, Colorado, and that true copies of the same were sent via Certified Mail Return Receipt Requested to:

Murphy Exploration & Production Company
CT Corporation System
40 West Lawrence, Suite A
Post Office Box 1166
Helena, Montana 59624-1166;

Pioneer Natural Resources USA, Inc.
CT Corporation System
40 West Lawrence, Ste A
Post Office Box 1166
Helena, Montana 59624-1166;

Marathon Oil Company
CT Corporation System
40 West Lawrence, Suite A
Post Office Box 1166
Helena, Montana 59624-1166; and

Samson Hydrocarbons Company
Prentice-Hall Corporation System, Inc.
32 Loockerman Square Suite L100
Dover, Delaware 19901.

Additionally, I certify that a true copy of the Emergency Administrative Order issued under the same docket number on September 20, 2001 (which was sent by and returned to EPA as undeliverable), was sent, along with the copy of the above First Amended Administrative Order, via Certified Mail Return Receipt Requested to Samson Hydrocarbons Company at the above address.

Dated: 10-03-2001

By: James H. Eppers
James H. Eppers

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

SEP 20 2001

Ref: 8ENF-T

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Murphy Exploration and Production Company
CT Corporation System
40 West Lawrence, Suite A
P.O. Box 1166
Helena, MT 59624-1166

RE: Emergency Administrative Order under Section 1431 of the SDWA Docket No. SDWA-08-2001-33

Dear Murphy Exploration and Production Company:

Enclosed is an Emergency Administrative Order (Order) issued under Section 1431 of the Safe Drinking Water Act (SDWA), 40 U.S.C.§ 300i. This Order concerns many of the same issues that were discussed in the previously issued order bearing the Docket number SDWA-8-99-68, first issued on September 30, 1999, first amended on November 5, 1999, and second amended on November 30, 2000, and also to an Order issued to Respondent Pioneer Natural Resources USA, Inc. bearing Docket number SDWA-8-2001-27.

This Order, unlike the Order bearing Docket number SDWA-8-99-68, does not name AMARCO Resources Inc. as a Respondent. This is due to the fact that each previous Order or amended Order naming AMARCO as a Respondent was returned to this office by the U.S. Postal Service because the company no longer exists.

The United States Environmental Protection Agency (EPA) has learned that the cumulative practices in the East Poplar Oil Field beginning as early as 1952, have contributed to the current groundwater contamination located in and around the East Poplar Oil Field. This Order requires all Respondents to provide at least 125 gallons of drinking water per person each day to home sites in the oil field and the water must be hooked to each home site's plumbing. In addition, the Order requires a study and assessment of the threat to the public water supply wells currently supplying drinking water to persons in the City of Poplar. Finally, the Order requires submission of certain

documents as specified in the Order. The penalties for failing to comply are set forth in the Order.

This Order is based on both current and historic contamination of the ground water in and around the area of the East Poplar Oil Field within the boundary of the Fort Peck Indian Reservation in Roosevelt County, Montana. EPA has identified the presence of the contaminant benzene and a substantial increase in the total dissolved solids levels in the Quaternary Deposits. The presence of these contaminants in the Quaternary Deposits, an Underground Source of Drinking Water (USDW), may present an imminent and substantial endangerment to the health of any person, now or in the future, who drinks and uses this water. EPA has also determined that Respondents, through the operations of oil and gas production facilities in the East Poplar Oil Field, have caused or contributed and/or are continuing to cause and contribute to the endangerment of the USDW.

The issuance of this Order is consistent with EPA's goal of protecting human health and the environment, including working to ensure the provision of safe drinking water to the affected residents. With regard to this Order, please contact Nathan Wiser at (303) 312-6211 or write Mr. Wiser at the address provided above, mail code 8-ENF-T.

Sincerely,

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

Enclosure

cc: with enclosure

Deb Madison, Assiniboine and Sioux Tribes Environmental Program Manager
George Hudak, Montana Board of Oil and Gas Conservation

cc: without enclosure

Arlyn Headdress, Chairman, Fort Peck Tribal Executive Board
Doug Endreson, Tribal Counsel, Assiniboine and Sioux Tribes

bcc: with enclosure

Nathan Wiser, 8ENT-T
Jim Eppers, 8ENF-L
Steven Moores, 8RC
Barbara Burkland, 8MO
Jim Boyter, 8MO
Gary Carlson, 8P-W-MS
John Wardell, 8MO
David A. Carson, Dept. of Justice, 999 18th St., Suite 945, North Tower, Denver, CO 80202

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SEP 20 2001

Ref: 8ENF-T

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Marathon Oil Company
CT Corporation System
40 West Lawrence, Suite A
Helena, MT 59624-1166

RE: Emergency Administrative Order under Section 1431 of the SDWA Docket No. **SDWA-08-2001-33**

Dear Marathon Oil Company:

Enclosed is an Emergency Administrative Order (Order) issued under Section 1431 of the Safe Drinking Water Act (SDWA), 40 U.S.C.§ 300i. This Order concerns many of the same issues that were discussed in the previously issued order bearing the Docket number SDWA-8-99-68, first issued on September 30, 1999, first amended on November 5, 1999, and second amended on November 30, 2000, and also to an Order issued to Respondent Pioneer Natural Resources USA, Inc. bearing Docket number SDWA-8-2001-27.

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Sincerely,

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

Enclosure

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Deb Madison, Assiniboine and Sioux Tribes Environmental Program Manager
George Hudak, Montana Board of Oil and Gas Conservation

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Arlyn Headdress, Chairman, Fort Peck Tribal Executive Board
Doug Endreson, Tribal Counsel, Assiniboine and Sioux Tribes

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SEP 20 2001

Ref: 8ENF-T

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Samson Hydrocarbons Company
Prentice-Hall Corporation System, Inc.
1013 Centre Road
Wilmington, DE 19805

RE: Emergency Administrative Order under Section 1431 of the SDWA Docket No. **SDWA-08-2001-33**

Dear Samson Hydrocarbons Company:

Enclosed is an Emergency Administrative Order (Order) issued under Section 1431 of the Safe Drinking Water Act (SDWA), 40 U.S.C.§ 300i. This Order concerns many of the same issues that were discussed in the previously issued order bearing the Docket number SDWA-8-99-68, first issued on September 30, 1999, first amended on November 5, 1999, and second amended on November 30, 2000, and also to an Order issued to Respondent Pioneer Natural Resources USA, Inc. bearing Docket number SDWA-8-2001-27.

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Sincerely,

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

Enclosure

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Deb Madison, Assiniboine and Sioux Tribes Environmental Program Manager
George Hudak, Montana Board of Oil and Gas Conservation

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Arlyn Headdress, Chairman, Fort Peck Tribal Executive Board
Doug Endreson, Tribal Counsel, Assiniboine and Sioux Tribes

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John Wardell, 8MO
David A. Carson, Dept. of Justice, 999 18th St., Suite 945, North Tower, Denver, CO 80202

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SEP 20 2001

Ref: 8ENF-T

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Pioneer Natural Resources USA, Inc.
CT Corporation System
40 West Lawrence, Suite A
Helena, MT 59624-1166

RE: Emergency Administrative Order under Section 1431 of the SDWA Docket No.**SDWA-08-2001-33**

Dear Pioneer Natural Resources USA, Inc:

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Sincerely,

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

Enclosure

cc: with enclosure

Deb Madison, Assiniboine and Sioux Tribes Environmental Program Manager
George Hudak, Montana Board of Oil and Gas Conservation

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Arlyn Headdress, Chairman, Fort Peck Tribal Executive Board
Doug Endreson, Tribal Counsel, Assiniboine and Sioux Tribes

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SEP 20 2001

Ref: 8ENF-T

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Samson Investment Company
Corporation Trust Company of Nevada
6100 Neil Road #500
Reno, NV 89511

RE: Emergency Administrative Order under Section 1431 of the SDWA Docket No. **SDWA-08-2001-33**

Dear Samson Investment Company:

Enclosed is an Emergency Administrative Order (Order) issued under Section 1431 of the Safe Drinking Water Act (SDWA), 40 U.S.C.§ 300i. This Order concerns many of the same issues that were discussed in the previously issued order bearing the Docket number SDWA-8-99-68, first issued on September 30, 1999, first amended on November 5, 1999, and second amended on November 30, 2000, and also to an Order issued to Respondent Pioneer Natural Resources USA, Inc. bearing Docket number SDWA-8-2001-27.

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Sincerely,

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
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Enclosure

cc: with enclosure

Deb Madison, Assiniboine and Sioux Tribes Environmental Program Manager
George Hudak, Montana Board of Oil and Gas Conservation

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Arlyn Headdress, Chairman, Fort Peck Tribal Executive Board
Doug Endreson, Tribal Counsel, Assiniboine and Sioux Tribes

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John Wardell, 8MO
David A. Carson, Dept. of Justice, 999 18th St., Suite 945, North Tower, Denver, CO 80202

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

01 SEP 20 PM 3:51

EPA REGION VIII
HEARING CLERK

IN THE MATTER OF	Docket No. **SDWA-08-2001-33**
Marathon Oil Company, Murphy Exploration and Production Company, Pioneer Natural Resources USA Incorporated, Samson Investment Company, Samson Hydrocarbons Company, Respondents	**EMERGENCY ADMINISTRATIVE ORDER**
East Poplar Oil Field Fort Peck Indian Reservation Montana	
Proceedings under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. §300g-i(a)	

DESCRIPTION

This Order requires Respondents to deliver adequate water to replace the contaminated water supply at several homesites in the East Poplar Oil Field and to collect new data to ascertain the groundwater contamination threat to public water supply wells in and around the City of Poplar, Montana. It also requires submission of records.

East Poplar Oil Field
TABLE OF CONTENTS

I STATUTORY AUTHORITY

1. The following Findings are made and Order issued under the authority vested in the Administrator of the U.S. Environmental Protection Agency (EPA) by Section 1431(a) of the Safe Drinking Water Act (the Act), 42 U.S.C. §300i(a). The authority to take this action has been properly delegated to the undersigned EPA program supervisors.

II LOCATION

2. This matter takes place on lands within the exterior boundary of the Fort Peck Indian Reservation in Roosevelt County in the State of Montana.

III DESCRIPTION OF RESPONDENTS

3. Marathon Oil Company is an Ohio corporation and therefore a "person" within the meaning of 40 C.F.R. §141.2 and §144.2 and Section 1401(12) of the Act, 42 U.S.C. §300f(12). TXO Production Corp. a Delaware corporation, merged with Marathon Oil Company. TXO Production Corp was a trade name for Texas Oil & Gas Corp. a Delaware corporation.

4. Murphy Exploration & Production Company is a Delaware corporation doing business in the State of Montana and

therefore is a "person" within the meaning of 40 C.F.R. §141.2 and §144.2 and Section 1401(12) of the Act, 42 U.S.C. §300f(12).

5. Pioneer Natural Resources USA, Inc. is a Delaware corporation and therefore a "person" within the meaning of 40 C.F.R. §141.2 and §144.2 and Section 1401(12) of the Act, 42 U.S.C. §300f(12). Pioneer Natural Resources USA, Inc. acquired the assets of Mesa Petroleum Co. Mesa Petroleum Co. did business in the state of Montana.

6. Samson Investment Company is a Nevada corporation and therefore a "person" within the meaning of 40 C.F.R. §141.2 and §144.2 and Section 1401(12) of the Act, 42 U.S.C. §300f(12). Samson Hydrocarbons Company, a subsidiary of Samson Investment Company, is a Delaware corporation and therefore a "person" within the meaning of 40 CFR §141.2 and §144.2 and Section 1401(12) of the Safe Drinking Water Act, 42 U.S.C. §300f(12). By 1961, C.C. Thomas, an original oil operator on the East Poplar Oil Field, transferred the lease to produce oil from the "Huber" property to Emile A. Polumbus. Emile A. Polumbus later formed the Polumbus Petroleum Corporation ("Polumbus"). Polumbus did business in the state of Montana. Polumbus later merged with W.R.

Grace & Co. (a Connecticut corporation) to become Grace Petroleum Corporation in 1976. Grace Petroleum Corporation did business in the state of Montana. On or about January 21, 1993, Samson Investment Company acquired all issued and outstanding stock of Grace Petroleum Corporation and became that company's successor in interest. On or about that same day, Samson Investment Company changed the name of Grace Petroleum Corporation to Samson Natural Gas Company. Samson Natural Gas Company then changed its name to SNG Production Company on or about April 19, 1993. Then, on or about December 28, 1994, SNG Production Company changed its name to Samson Hydrocarbons Company.

7. Respondents own and/or operate or did own and/or operate oil and gas production facilities, including but not limited to oil or gas production wells, produced brine disposal wells, secondary recovery injection wells, drilled and abandoned dry holes, production and waste pits, storage tanks, oil/water separators, and distribution pipelines and pumping facilities, in the East Poplar Oil Field located within the following locations: Township 28 North, Range 51 East; Township 29 North, Range 50E; Township 29 North, Range 51E, on the Fort Peck Indian Reservation in

Roosevelt County in the State of Montana.

IV FINDINGS: GEOLOGY, EXTENT OF CONTAMINATION, HYDROLOGY

8. The uppermost geologic deposits found in the East Poplar Oil Field and within about 3 miles to southwest of the East Poplar Oil Field are Quaternary-aged (less than 2 million years old). These Quaternary-aged deposits, herein after referred to as "Quaternary deposits," consist of several different units, known and mapped as the Wiota Gravel, Sprole Silt, Glacial Till, and several unnamed distinct deposits, called alluvium, fan alluvium, colluvium, lake and pond deposits, and outwash deposits (see for instance "Geologic Map of the Poplar Quadrangle, Roosevelt, Richland and McCone Counties, Montana," U.S. Geological Survey, Map I-367, Roger B. Colton, 1963). Lithologic logs from monitoring wells and test wells in the area show thicknesses of the Quaternary deposits ranging from 22 to 153 feet. Based on hydraulic head measurements from wells, groundwater in the Quaternary deposits east of the Poplar River generally moves westward toward the Poplar River, where it merges with south-ward flowing groundwater in the Poplar River Valley. Water in the Quaternary deposits in and around

the East Poplar Oil Field is recharged by infiltration of precipitation, and movement of water from up-gradient areas. Groundwater flow in the Quaternary deposits should have a horizontal component because its downward movement is bounded by the underlying, relatively impermeable Bearpaw Shale, and is forced to move laterally. Depth to the water table below land surface in this area generally ranges from about 5 to 139 feet in the Quaternary deposits. Several rural residential homes in and around the East Poplar Oil Field derive their drinking water from the Quaternary deposits aquifer. Past sampling from private groundwater wells in and around the East Poplar Oil Field area showed, at the time, total dissolved solids (TDS) content ranging from 427-2,680 milligrams per liter (mg/l).

9. The Quaternary deposits form an unconfined aquifer which contains a sufficient quantity of groundwater to supply a public water system. A public water system (PWS), as defined by 40 C.F.R. § 141.2, means a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days

out of the year. The City of Poplar derives its drinking water from the Quaternary deposits aquifer through the use of three public water supply wells. On a daily basis, the wells collectively service an estimated 4000 people through about 1000 service connections. The water production rate at the wells varies from about 450 gallons per minute (gpm) during the winter to about 900 gpm during the summer. The wells operate about 5-1/2 hours each day. The total daily estimated water volume produced by the City of Poplar's water wells ranges from about 1.5 million gallons during the winter to about 3 million gallons during the summer.

10. The Quaternary deposits are the sole developed source of groundwater for the PWS for the City of Poplar, Montana, the tribally-owned PWS for the Poplar Head Start Center, and for private resident wells in and around the East Poplar Oil Field.

11. The Quaternary Deposits are an underground source of drinking water (USDW). A USDW, as defined under 40 C.F.R. § 144.3, means an aquifer or its portion which (a)(1) supplies any PWS, or (2) contains a sufficient quantity of groundwater to supply a public water system and either (i) currently supplies drinking water for

human consumption or (ii) contains fewer than 10,000 mg/l TDS; and (b) is not exempted pursuant to 40 C.F.R. §§ 144.7(b) and 146.4. The Quaternary deposits aquifer has not been exempted pursuant to 40 C.F.R. §§ 144.7(b) and 146.4.

12. Between 1989 and 1996, the United States Geological Survey ("USGS") has conducted an extensive groundwater investigation of saline-water contamination in and around the East Poplar Oil Field. The USGS reviewed groundwater and surface water quality data from existing private water wells, new monitoring wells, oil wells, brine-injection wells, and the Poplar River in the East Poplar Oil Field area. Additionally, the USGS completed an electromagnetic geophysical survey, by measuring the electromagnetic apparent conductivity corrected for local anomalies (wells, pipelines, etc.), over a 21.6 square mile area in a partial effort to delineate the extent of the saline-water contamination plumes. Groundwater in the area determined by the USGS to be contaminated contained total dissolved solid levels as high as 91,100 mg/l.

13. Between January 1999 and September 2000, EPA collected water samples at 21 home sites with private water wells in the contamination area to determine if contamination

by oil field brine and associated hydrocarbon by-products, or other organic chemical compounds was a concern. EPA also sampled the three wells that supply the City of Poplar's public drinking water, located approximately 3 miles from the closest point studied by the USGS, a point which was then a known contaminant plume, and from one water well supplying water to the Fort Peck Indian Government offices also located in the City of Poplar. EPA found TDS levels at the 21 home sites to range between 433 and 17,000 mg/l. EPA found a total of 81 detections of 10 different organic chemical compounds ranging in concentration between 0.00028 and 193.0 mg/l. A summary of all of EPA's sample results is attached to this Order as Exhibit 1.

14. In September, 2000, EPA took samples of brine prior to its injection at two current injection well locations in the East Poplar Oilfield for the purpose of characterizing the brine injected. The two locations were the EPU #1-D injection well in Section 30, Township 29 North, Range 51 East and the Huber #5-D injection well in Section 10, Township 28 North, Range 51 East. The sample results showed several remnants of hydrocarbons. These analyzed results are summarized in the following table.

INJECTATE SAMPLES

Sample date	Constituent detected	Concentration range (mg/l)
9/29/00	Total Dissolved Solids	85,900 to 120,000
9/29/00	Benzene	1.67 to 1.76
9/29/00	Ethylbenzene	0.115 to 0.181
9/29/00	Toluene	1.53 to 1.86
9/29/00	Xylenes (total)	0.146 to 0.546
9/29/00	Total Extractable Hydrocarbons	39.0 to 67.0
9/29/00	Diesel Range Organics	28.0 to 51.0
9/29/00	Naphthalene	0.023 to 0.036
9/29/00	Isopropylbenzene	0.0066 to 0.011
9/29/00	n-Propylbenzene	0.012 to 0.019
9/29/00	1,2,4-Trimethylbenzene	0.056 to 0.087
9/29/00	1,3,5-Trimethylbenzene	0.019 to 0.028
9/29/00	bis(2-ethylhexyl)phthalate	0.049 to 0.053

15. Samples taken by both EPA at the existing home sites and USGS at several monitoring wells showed benzene contamination. A sample taken at one home site had benzene contamination between 0.058 and 0.078 mg/l, while other samples taken at USGS monitoring wells in the field were between 0.00158 and 0.00486 mg/l.

16. Under the Primary Drinking Water Standards, the maximum contaminant level ("MCL") for benzene, as set forth in 40 C.F.R. §141.61, is 0.005 mg/l. Under the Secondary

Drinking Water Standards, as set out in 40 C.F.R. §143.3, the standard for total dissolved solids is 500 mg/l. Water from private water wells in and around the East Poplar Oil Field contain contaminants in excess of these drinking water standards.

17. Benzene is a known human carcinogen. A causal relationship between benzene exposure and leukemia has been clearly established. EPA, in its consensus position on toxicological effects, the Integrated Risk Information System ("IRIS"), uses human occupational data to estimate the added risk of contracting cancer from exposure to benzene. Epidemiologic studies and case studies provide clear evidence of a causal association between exposure to benzene and acute nonlymphocytic leukemia and also suggest evidence for chronic nonlymphocytic leukemia and chronic lymphocytic leukemia. Other neoplastic conditions that are associated with an increased risk in humans are hematologic neoplasms, blood disorders such as preleukemia and aplastic anemia, Hodgkin's lymphoma, and myelodysplastic syndrome. These human data are supported by animal studies. The experimental animal data add to the argument that exposure to benzene increases the risk of cancer in multiple species at

multiple organ sites (hematopoietic, oral and nasal, liver, forestomach, preputial gland, lung, ovary, and mammary gland). See (1) Ross, D., 1996, "Metabolic basis of benzene toxicity" Eur. J. Haematol 57: (suppl): pp. 111-118, and (2) Latriano, L. Goldstein, B.D., Witz, G., (1986) "Formation of muconaldehyde, an open ring metabolite of benzene, in mouse liver microsomes: an additional pathway of toxic metabolites" Proc Natl Acad Sci USA 83: pp. 8356-8360. According to IRIS, dated January 2000, EPA estimates that consumption of drinking water containing 0.078 mg/l benzene is associated with an added risk of cancer of between 1 in 10,000 people and 1 in 100,000 people.

18. Therefore, the presence and entry of benzene at levels as high as 0.078 mg/l in the drinking water wells in the Quaternary deposits USDW presents an imminent and substantial endangerment to the health of persons.

19. In 1999, EPA toxicologist Dr. Robert Benson stated that water with a TDS concentration in excess of 1,000 to 2,000 mg/l is unpalatable and will not be voluntarily consumed by individuals. If an individual has no other source of water and is forced to consume water with TDS levels over 10,000 mg/l, the adverse health effects include severe osmotic diarrhea and severe dehydration.

Continued consumption after the onset of the above conditions may result in death.

20. As indicated previously, TDS levels as high as 17,000 mg/l have been found at private water wells in and around the East Poplar Oil Field and TDS levels have been found in the Quaternary deposits aquifer as high as 91,000 mg/l. This constitutes an imminent and substantial endangerment to the health of persons.

V FINDINGS: SOURCES OF CONTAMINATION

-MURPHY EXPLORATION AND PRODUCTION COMPANY-

21. The East Poplar Oil Field was discovered in early 1952, when Murphy Oil Corporation, the predecessor to Murphy Exploration and Production Company, drilled the Murphy #1 well, located in Section 2 of Township 28 North, Range 51 East (the conventional description for this location is T28N, R51E, S2). Within 3 years of the discovery well, 35 active oil production wells had been drilled by Murphy Oil Corporation. For at least the first 4 years during which the East Poplar Oil Field was active, the disposal method for produced brine water was to dump it in unlined earthen pits near the oil production wells. At least 1 million barrels (42 million gallons) of produced brine water was disposed

of in this manner between 1951 and 1955. The produced produced brine water contained high levels of total dissolved solids, including chloride ion.

22. On December 8 and 9, 1954, The Montana Oil and Gas Conservation Commission held a hearing to consider the development of the East Poplar Oil Field. During that hearing, R. J. Sweeney, of Murphy Oil Corporation's Reservoir Engineering Section, explained, among other things, that about 700,000 barrels of produced brine water had been produced from the East Poplar Oil Field as of that date. R. J. Sweeney also stated at the hearing that it was his estimation that the oil reserves of the East Poplar Oil Field were approximately 200,000,000 barrels.

23. On February 7 and 8, 1955, the Montana Oil and Gas Conservation Commission held a hearing to again consider the development of the East Poplar Oil Field. Attorneys were present who represented the following companies doing business at the time in the East Poplar Oil Field: Murphy Oil Corporation, Empire State Oil Company, Wagner-Christianson Company, C.C. Thomas, and Ashland Oil Company. During this hearing, the attorneys representing these companies made their company's respective recommendations regarding the

spacing of additional oil wells and the consideration by the Montana Oil and Gas Conservation Commission to unitize the East Poplar Oil Field.

24. On March 7, 1955, The Montana Oil and Gas Conservation Commission issued an order requiring each operator in the East Poplar Oil Field to develop a plan to dispose of the produced brine water from the oil production in the East Poplar Oil Field. The Montana Oil and Gas Conservation Commission's order was issued out of concern that the management of produced brine water at the time was a hazard to the Town of Poplar's water supply.

25. On July 8, 1955, the Montana Oil and Gas Conservation Commission held a hearing to discuss disposal of produced brine water in the East Poplar Oil Field. During that hearing, Murphy Oil Corporation suggested use of injection wells to dispose of their produced brine water. It was first estimated that the first injection well would be the Murphy #46 well, which would inject 2500 barrels of produced brine water per day. Murphy Oil Corporation estimated that the ultimate injection capacity would be 23,000 barrels of produced brine water injected into several injection wells.

26. On June 29, 1956, two 1000-barrel produced brine water tanks in the East Poplar Oil Field, operated by Murphy Oil Corporation, exploded and caught fire and were a total loss. In a July 31, 1956 internal memorandum, Murphy Oil Corporation states that produced brine water is a carrier of hydrocarbons, and this led to the produced brine water's flammability. In addition, it is logical to assume that the contents of the two 1000-barrel produced brine water tanks spilled onto the ground.

27. On July 3, 1957, Murphy Corporation applied to the Montana Oil and Gas Conservation Commission for approval to construct a new well and inject into it its excess produced brine water, produced from the deeper Madison Formation for injection into the Dakota sandstone formation at one well located at T29N, R51E, Section 30, SE 1/4, SE 1/4, SE 1/4. Murphy Corporation estimated that the injection rate into this injection well would be 7000 barrels of water per day.

28. On July 29, 1957, the Montana Oil and Gas Conservation Commission held a hearing during which it approved, on an emergency basis, the July 3, 1997, proposal from Murphy with regard to disposal of produced brine water through a well.

29. On September 24, 1957, the Montana Oil and Gas Conservation Commission held a hearing to discuss Poplar River water sampling results which showed that levels of chloride ion in the river were as high as 1500 mg/l. During the hearing, the Montana Oil and Gas Conservation Commission reported that, during July 1957, 370,154 barrels of produced brine water having a total dissolved solids content of 180,000 mg/l was disposed in earthen pits, by operators Crescent Oil and Gas Corporation, Empire State Oil Company, Richfield Oil Corporation, C.C. Thomas, Wagner Christianson, and Murphy Corporation. The hearing concluded with an order requiring all oil operators, except C.C. Thomas, to submit by March 1, 1958, a suitable plan for disposal of produced brine water that would eliminate the danger to the fresh water supplies of the City of Poplar.

30. On September 24, 1957, Murphy Corporation reported by letter to the Montana Oil and Gas Conservation Commission, that in the previous one year, it had injected 1.25 million barrels of produced produced brine water into the Dakota sandstone formation through Wells #46 and #59. Murphy Corporation reported that the first water injected occurred on September 26,

1956.

31. On October 10, 1960, Hillary A. Oden, Acting District Engineer for the U.S. Geological Survey, sent a letter to Murphy Corporation advising of the results of a September 28, 1960 inspection by the Commission. In the letter, reference was made to large amounts of oil leaked or spilled around some well sites in the East Poplar Oil Field. The same letter also referred to Murphy Corporation's intention to inject 100% of its produced brine water into injection wells as the only reasonable means to arrest then-present surface salt water problems. Therefore, Murphy Corporation was not yet injecting 100% of its produced brine water. The common practice of the day was to allow the produced brine water to evaporate in earthen pits. It is logical to assume that since not all of Murphy's produced brine water was being injected and that the common practice at the time was to use earthen pits for produced brine water not injected, that some percentage of Murphy's produced brine water would have been disposed of in earthen pits.

32. On May 25, 1961, Hillary A. Oden, Acting District Engineer for the U.S. Geological Survey, issued a memorandum to the Regional Oil and Gas Supervisor in

Casper, Wyoming, in which he reported that Mr. James, of the Murphy Corporation, had called him earlier that day to advise him that several injection wells had been inactivated (e.g. "shut in") while Murphy investigated water break outs at some of their wells. Water break outs indicate that produced brine water came to the surface and spilled on the ground around the wellhead.

33. On June 29, 1961, the Montana Oil and Gas Conservation Commission held a public hearing for the purpose of considering Murphy Corporation's proposal to utilize Well #59 for injection purposes. During the hearing, the Commission found that Murphy Corporation used evaporation pits to dispose of excess produced produced brine water and that the new well would be able to accommodate up to 17,000 barrels of water injected per day.

34. On July 6, 1961, Hillary A. Oden, District Engineer for the U.S. Geological Survey, issued a memorandum to the Regional Oil and Gas Supervisor in Casper, Wyoming, in which he described testimony presented at the June 29, 1961 Montana Oil and Gas Conservation Commission hearing held in Helena, Montana given by representatives of Murphy Corporation, C.C. Thomas and Richfield Oil Company. Mr. Oden stated that Murphy

Corporation admitted that at least one water supply well (the Akers well) had been contaminated by earthen pits and wanted more time to study the problem. Mr. Polumbus, representing C.C. Thomas's lease, stated that the disposal of 1000 barrels of produced brine water each day onto the surface "was not hurting anyone." Richfield Oil Company's testimony was that their use of earthen pits was not harmful.

35. On June 29, 1961, Hillary A. Oden, District Engineer for the U.S. Geological Survey, read a statement at the June 29, 1961 public hearing convened by the Montana Oil and Gas Conservation Commission, in Helena, Montana. He stated that the previous seven years' produced brine water disposal practice of dumping into earthen pits has damaged fresh water supplies and the land. Mr. Oden stated that there had been too many violations of Section 221.32 of the Code of Federal Regulations, which states in part, "The lessee shall not pollute streams or damage the surface or pollute the underground water of the leased or other lands."

36. Testimony given at the June 29, 1961 public hearing convened by the Montana Oil and Gas Conservation Commission revealed that at least 24 earthen pits were in operation by six operators in East Poplar Oil Field

as of June 15, 1961. The testimony stated that the six operators are (1) Murphy Corporation, (2) Ajax Oil, (3) Crescent Oil Company, (4) Richfield Oil Company, (5) Wagner-Christiansen Company, and (6) E. A. Polumbus (formerly C.C. Thomas). The testimony introduced a map showing the locations of the 24 earthen pits, and six private water wells in and around the East Poplar Oil Field. The testimony provided calculation that the earthen pits were leaking produced brine water into the gravel strata underlying them and so endangering fresh water supplies. The testimony further provided that water samples taken from the Akers private water well showed total dissolved solids content of 80,060 mg/l and 34,632 mg/l chloride ion, located in T29N, R51E, S21, SE 1/4. The testimony indicated that during January 1961, a total of 642,000 barrels of produced brine water was produced in the East Poplar Oil Field, and that 158,000 barrels of that amount was disposed of into earthen pits. The testimony also shows that the earthen pits in use in East Poplar Oil Field were unlined.

37. On June 9, 1964, J.F. Otero, Acting Superintendent of the Bureau of Indian Affairs, in Poplar Montana, issued a memorandum to the District Engineer at the U.S.

Geological Survey, in Billings, Montana. The memorandum stated that during a recent field inspection about 4 acres of crop and/or pasture land was damaged from seepage and overflow of produced brine water from multiple pits. The lands damaged were described as about 3 acres in T28N, R51E, S3, S1/2, NW 1/4, and 1 acre in T28N, R51E, S3, N1/2 SW 1/4. A June 12, 1964 follow up memorandum from Hillary A. Oden, U.S. Geological Survey to the Superintendent of the Bureau of Indian Affairs in Poplar, Montana, revealed that Murphy Oil Corporation was the operator of at least one of these pits which overflowed.

38. On September 7, 1971, Virgil L. Pauli, District Engineer for the U.S. Geological Survey, wrote a letter to Murphy Oil Corporation expressing concern that several of their wells had the potential to pollute a nearby stream.

39. On or about January 3, 1972, Mr. Orphey "Bud" Lien answered interrogatories in the District Court of the 15th Judicial District of the State of Montana. In his answers, Mr. Lien stated that he was the title-holder of lands located in T29N, R51E, Sections 8, 16, 17, and 20. Mr. Lien also stated that 40 acres of land in T29N, R51E, S17 had contaminated underground water

supply from a leaking pipeline he observed on December 4, 1970. He further stated that 40 acres of land in T29N, R51E, S20 had contaminated underground water supply from practices observed between 1968 and 1969. He further stated that 40 acres of land in T29N, R51E, S16 had contaminated underground water supply from practices observed between 1968 and 1969.

40. On December 3, 1974, Virgil L. Pauli, District Engineer for the U.S. Geological Survey, wrote a letter to Murphy Oil Corporation expressing concern about several environmental problems noted during a recent inspection, conducted November 20 - 22, 1974. The issues raised in the letter include oil spillage, improperly maintain pits, pits containing oil but no wire mesh or flagging, and general unsightliness owing to accumulated junk and unused equipment.

41. On March 5, 1975, Virgil L. Pauli, District Engineer for the U.S. Geological Survey, wrote a letter to Murphy Oil Corporation confirming several agreed-to practices at the East Poplar Oil Field, including a provision that earthen pits must not be used, except in emergencies, and that as soon as practicable after use, the produced brine water introduced to earthen pits must be collected and directed to underground injection

wells.

42. On April 17, 1975, the Montana Board of Oil and Gas Conservation (formerly the Montana Oil and Gas Conservation Commission) held a public hearing in Plentywood, Montana, to listen to complaints by landowners in and around the East Poplar Oil Field. During the hearing, extensive evidence was submitted through testimony by these landowners that oil and gas operators in the area violated regulations of the Montana Board of Oil and Gas Conservation with regard to disposal of produced brine water.

43. On April 17, 1975, Mr. Orphey "Bud" Lien, introduced a prepared statement as testimony at the Montana Board of Oil and Gas Conservation public hearing held in Plentywood, Montana. In his statement, Mr. Lien stated that the aquifer under his land, located in the northern part of the East Poplar Oil Field, had been so contaminated with produced brine water and other chemical leaks and spills that his drinking water supply was damaged and forced him to haul water for use in cooking and drinking. He stated that, at the time, he was suing Murphy Oil Corporation for damages to his land.

44. On July 28, 1975, Judson D. Sweet, Petroleum Engineer

for the Montana Board of Oil and Gas Conservation, wrote a letter to Mr. Orphey Lien in which he described that Joe Simonson, a field inspector with the Board of Oil and Gas, had met with Mr. Lien and that Mr. Simonson stated that there had been numerous instances of produced brine water pipeline leaks which resulted in damage to the land surface and that improperly managed produced brine water had contaminated Mr. Lien's fresh water supply well located in T29N, R51E, S21, which was drilled in 1969.

45. On July 28, 1975, Judson D. Sweet, Petroleum Engineer for the Montana Board of Oil and Gas Conservation, wrote a letter to Murphy Oil Corporation requesting, among other things, that they settle claims made by Mr. Orphey Lien against Murphy Oil Corporation due to damage caused by produced brine water spills and leaks.

46. On March 22, 1977, B. Fiant, Petroleum Engineering Technician, U.S. Geological Survey in Billings, Montana, issued a memorandum to the files documenting a meeting held on March 17, 1977, attended by B. Fiant and H. Lemm, of the U.S. Geological Survey, D. Allison, of the Fort Peck Bureau of Indian Affairs, and B. Melear of Murphy Oil Co. The memorandum stated that there was still a large number of earthen pits in the

East Poplar Oil Field, most of which contained, at the time, some type of produced fluid. It was also noted that excessive damage to vegetation was present at the time due to leakage and leaching of the highly saline produced brine water.

47. On March 29, 1977, Virgil L. Pauli, District Engineer for the U.S. Geological Survey, wrote a letter to Murphy Oil Corporation in which approval was given to use seven wells for disposal of produced brine water. The wells approved were the Mule Creek #1-D, Wetsit #1-D, Courchene #1-D, EPU #1-D, EPU #80-D, EPU #8-D, and EPU #5-D. In the approval letter, Mr. Pauli reminded Murphy Oil Corporation that Notice of Lessee No. 2B (NTL-2B) required emergency pits to emptied of all contents within 48 hours following their use and that use of emergency pits must be reported to the U.S. Geological Survey office in Billings, Montana.

48. On August 9, 1983, Murphy Oil Company reported on the Well EPU #1-D, located in T29N, R51E, S30, SE 1/4, SE 1/4 , SE 1/4. The well was drilled and completed on September 12, 1957. This brine water injection well experienced several problems over the next several years, including the replacement of its injection tubing in October 1961, July 1962, February 1968, and

December 1979. In February 1980, a 5-1/2 casing liner was cemented to the 7-inch casing because a casing leak had been found in the 7-inch casing. Also in February 1980, the 4-1/2 tubing was discovered to have parted and was replaced, indicating that the well had simultaneous leaks in its tubing and casing. At the time of this work, the well was reported by Murphy to have been injecting at a rate of 4700 barrels of produced brine water per day. The cumulative injection volume through December 1979 into this well was reported by Murphy to be 76,818,910 barrels of produced brine water. At a minimum, this well threatened the Quaternary deposits aquifer. This well may have actually allowed injected fluid to escape to the Quaternary deposits aquifer.

49. In a letter dated June 3, 1986, sent to the Miles City, Montana Bureau of Land Management office, Bureau of Indian Affairs field technician Vina Smith reported that the reserve pit at Well EPU #111 in T29N, R51E, S12, SW 1/4, was full of water and had no berm on its south side. On June 27, 1986, Murphy Oil USA, Inc. superintendent Ray Reede reported that on June 26, 1986, the pit's water had been pumped out and the berm on the south side had been repaired.

50. On October 27, 1988, Larry Travis, of the Bureau of Indian Affairs, reported to the Miles City, Montana Bureau of Land Management office that an October 25, 1988 inspection revealed a leak in a Murphy Oil pipeline located in T29N, R50E, S13, N ½.

51. A June 1, 1988, report prepared by Charles A. Norman and Randall Fetterolf entitled,"Report on Trust Royalties on the East Poplar Unit, Montana May 1952 through May 1987," revealed that over 40 million barrels of oil had been produced from the East Poplar Oil Field since its inception through May 1987.

52. On September 18, 1989, the Bureau of Indian Affairs, reported to the Miles City, Montana Bureau of Land Management office that a September 15, 1989 inspection revealed a leak in a Murphy Oil pipeline located between the Iron Bear #4 well in T29N, R50E, S12, NW 1/4, NE 1/4, and a tank battery.

53. On October 31, 1996, the Miles City, Montana Bureau of Land Management office issued a written order to Murphy Exploration and Production Company. The order cited an inspection conducted on October 29, 1996, which revealed a pit, located at Well EPU #110 in T29N, R51E, S29, NW 1/4, SW 1/4, that was in a state of disrepair and contained oil. The order required Murphy to either

apply for permission to keep the pit, or close the pit. It also required that Murphy repair the pit to keep out livestock. It is not known to EPA whether or not the pit was lined.

54. In a letter dated July 1, 1997, Murphy Exploration and Production Company stated that they conducted a 3-dimensional seismic profile over the East Poplar Oil Field during the winter of 1995. This work likely used either subsurface detonation of dynamite, or vehicles that induced seismic shock waves into the subsurface. Such shock waves could have fractured the Bear Paw Shale, which, located approximately between 50 and 700 feet below ground surface, forms the geologic formation directly below the Quaternary deposits aquifer. A fractured Bear Paw Shale would impede its natural protection of the underground source of drinking water from contamination originating in deeper formations such as the Judith River formation, Dakota formation, or Madison formation. This is particularly the case since the Judith River formation, located immediately below the Bear Paw Shale, was known to be highly pressurized due to its heavy use as an injection zone.

55. On October 27, 1998, Ray Reede, of Murphy Exploration and Production Company, called the Miles City, Montana

Bureau of Land Management to report a casing leak discovered in the oil well EPU #16 in T29N, R51E, S33, SW 1/4, SE 1/4. The leak was discovered at a depth of 3375 feet below ground surface. At a minimum, this leak threatened the Quaternary deposits aquifer since contaminant fluids could have flowed toward the surface from the leak via an uncemented pathway from 3375 feet depth to the aquifer. This leak may have actually allowed fluids from the well to escape into the Quaternary deposits aquifer.

56. On August 31, 1999, EPA issued a notice of noncompliance to Murphy Exploration and Production Company for exceeding the maximum allowable injection pressure at the Well #5-D (EPA ID No. MT2021-00021), located at T29N, R51E, S19, SE 1/4, SE 1/4, following an inspection of the well on July 13, 1999. Exceeding the maximum allowable injection pressure can result in injected produced brine water breaking through the natural geologic confinement and migrating vertically into the Quaternary deposits aquifer.

57. On May 31, 2001, EPA issued a second notice of noncompliance to Murphy Exploration and Production Company for again exceeding the maximum allowable injection pressure at the Well #5-D (EPA ID No. MT2021-

00021), located at T29N, R51E, S19, SE 1/4, SE 1/4, following an inspection of the well on May 8, 2001. Exceeding the maximum allowable injection pressure can result in injected produced brine water breaking through the natural geologic confinement and migrating vertically into the Quaternary deposits aquifer.

58. A list of 76 spills reported by Murphy Exploration and Production Company in the East Poplar Oil Field is included as Exhibit 2 to this Order, along with the actual spill reports themselves. Cumulatively, these 76 spill reports amass a total of 666 barrels of oil and 965 barrels of produced brine water that were spilled onto the ground between February 1, 1976 and April 29, 2001, at various locations around the East Poplar Oil Field. Some, but not all, of these pollutants were left on the ground and threatened or contaminated the Quaternary deposits aquifer.

-PIONEER NATURAL RESOURCES USA INC.-

59. During April and May, 2000, Pioneer Natural Resources USA, Inc. drilled several groundwater monitoring wells around the location of the Biere #1-22 well, a well formerly operated as an oil well which was plugged in September 1984, located in T28N, R51E, S22, NW 1/4, SW 1/4. Upon sampling these groundwater monitoring wells,

and coupled with the results of the U.S. Geological Survey studies cited in Paragraph 13, Pioneer Natural Resources USA, Inc. acknowledged that the Biere #1-22 well was leaking contamination into the Quaternary deposits aquifer. On August 21, 2001, an EPA-issued Emergency Administrative Order upon Consent with Respondent Pioneer Natural Resources USA, Inc. became effective. The Order requires Pioneer to stop the leak from the Biere #1-22 well within 90 days of that Order's effective date. The Biere #1-22 well was originally drilled as an oil production well in 1970, and first plugged in 1984. Within several months of its plugging, the water broke out at the surface of the well and, in 1985, it was plugged again by injecting cement into a nearby "relief" well. This second plugging appears to have worked for a while, but as early as 1993 the Biere #1-22 well began leaking produced brine water brine into the Quaternary deposits aquifer.

-SAMSON INVESTMENT COMPANY-
-SAMSON HYDROCARBONS COMPANY-

60. Among the first oil operators in the East Poplar Oil Field was C.C. Thomas, whose Huber lease located in T28N, R51E, S10, was not ultimately included in the unitization of the East Poplar Oil Field. C.C. Thomas

operated at least four oil wells, starting at least as early as December 1954. By June 29, 1961, this lease had been transferred to E.A. Polumbus, who later formed the Polumbus Petroleum Corporation. The Polumbus Petroleum Corporation merged with W.R. Grace & Company - Conn. to form Grace Petroleum Corporation. On July 1, 1986, Grace Petroleum Corporation transferred their interest in the Huber #1, Huber #2, Huber #3, Huber #4 and Huber #5 wells to Murphy Oil USA, Inc. Samson Investment Company acquired the Grace Petroleum Corporation in a stock acquisition. The method of disposing of produced brine water during the early days of the East Poplar Oil Field's history was to dump it in earthen pits. C.C. Thomas, and later E.A. Polumbus utilized this method of produced brine water disposal in and around the oil wells on the Huber lease from at least December 9, 1954 to June 29, 1961.

61. During the period between October 1954 and May 1955, C.C. Thomas produced 62,917 barrels of produced brine water that was dumped on the ground as disposal. At a public hearing convened by the Montana Oil and Gas Conservation Commission on February 8, 1955, attorney Winston Howard, representing C.C. Thomas, testified that C.C. Thomas' water production rate was 367 barrels

of produced brine water per day.

62. In a July 6, 1961 memorandum from Hillary A. Oden, District Engineer for the U.S. Geological Survey, to The Regional Oil and Gas Supervisor for the U.S. Geological Survey, it was stated that, at a June 29, 1961 Montana Oil and Gas Conservation Commission hearing, Mr. E.A. Polumbus stated that he was disposing of about 1000 barrels of produced brine water from four oil wells each day onto the land surface.

63. A September 28, 1982 Montana Oil and Gas Conservation Commission sundry notice signed by the Grace Petroleum Corporation indicates that the Huber #4 brine water disposal well located in T28N, R51E, S10, had water surfacing at its wellhead, and that the cause of this water surfacing was through either the Huber #4A salt water disposal well or the 50-foot offset Huber #4 oil well or a combination of both. At a minimum, this leak threatened the Quaternary deposits aquifer. This leak may have actually allowed fluids from the well to escape into the Quaternary deposits aquifer.

64. A July 18, 1984 well sketch for the Well EPU #110x located in T28N, R51E, S10 shows a total of 23 casing leaks between the depths of 1136 and 4763 feet below ground surface and a casing patch at 428 feet below

ground surface. At a minimum, these leaks, if present, threatened the Quaternary deposits aquifer since contaminant fluids could have flowed toward the surface from the leaks. The leaks may have actually allowed fluids from the well to escape into the Quaternary deposits aquifer.

65. A February 20, 1996 Montana Board of Oil and Gas sundry notice signed by Murphy Exploration and Production Company indicates that the Huber #4A oil well, located in T28N, R51E, S10, had casing leaks at 121 feet and 1300 feet depth. At a minimum, these casing leaks threatened the Quaternary deposits aquifer. The leaks may have actually allowed fluids from the well to escape into the Quaternary deposits aquifer.

-MARATHON OIL COMPANY-

66. During the 1981 construction of the Buckles SWD #1 well, located in T28N, R51E, S22, the TXO Production Company had difficulties. Twice during construction, TXO Production Company, in daily drilling reports dated May 28 - 30, 1981, reported that water from the Judith River Formation at around 880 feet below ground surface flowed up the wellbore to the surface, breaking through the newly placed cement behind the casing. This could have resulted in a permanent channel behind the casing

allowing movement of injected water from the Judith River formation into the Quaternary deposits aquifer. At a minimum, this threatened the Quaternary deposits aquifer. This may have actually allowed fluids from the well to escape into the Quaternary deposits aquifer.

67. On August 20, 1982, TXO Production Corporation issued an internal memorandum from R.A. Varela to E.J. Quinlan III. In the memorandum it is stated that the Buckles A #1 well located in T28N, R51E, S22 had been shut in since May 9, 1982 due to leaks in the produced brine water pipeline leading to the salt water injection well.

68. On October 19, 1982, TXO Production Company issued a spill report. The report stated that 200 barrels of oil overflowed tanks located at T28N, R51E, S22 and spilled onto the ground inside the tank battery. The report further stated that a vacuum truck picked up 190 barrels of oil and returned it to the tank, thereby leaving about 10 barrels on the ground.

69. On February 24, 1984, TXO Production Company issued an internal memorandum from R.E. Dashner to P.A. Kriz. The memorandum recommended plugging and abandoning the Buckles "A" #1, Buckles "B" #1 and Buckles SWD wells,

all of which were located in T28N, R51E, S22. The reason stated in the memorandum is that the wells had been plagued by leaks in pipes due to the corrosive nature of the produced brine water. At a minimum, these leaks threatened the Quaternary deposits aquifer. The leaks may have actually allowed fluids from the well to escape into the Quaternary deposits aquifer.

70. On May 7, 2001, during interviews with local residents Margaret Abbott, George Ricker, and Helen Ricker, EPA inspector Nathan Wiser was told that a seismic survey was conducted in the East Poplar Oil Field sometime during the middle 1980's. This work likely used either subsurface detonation of dynamite, or vehicles that induced seismic shock waves into the subsurface. Such shock waves could have fractured the Bear Paw Shale, which, located approximately between 50 and 700 feet below ground surface, forms the geologic formation directly below the Quaternary deposits aquifer. A fractured Bear Paw Shale would impede its natural protection of the underground source of drinking water from contamination originating in deeper formations such as the Judith River formation, Dakota formation, or Madison formation. This is particularly the case since the Judith River formation, located immediately

below the Bear Paw Shale, was known to be highly pressurized due to its heavy use as an injection zone.

71. In a telephone conversation with a representative of Pioneer Natural Resources USA, Inc. on or about August 28, 2001, EPA representative Nathan Wiser was told that TXO Production Company conducted this seismic survey during the 1980's.

VI FINDINGS OF IMMINENT AND SUBSTANTIAL ENDANGERMENT TO THE QUATERNARY DEPOSITS AQUIFER

72. Respondents or their predecessors have engaged in dumping at least 1,000,000 barrels of produced brine into unlined pits in and around the East Poplar Oil Field. Respondents or their predecessors have operated oil production related appurtenances which leaked. Respondents or their predecessors have spilled oil and produced brine onto the ground surface. These oil production activities resulted in groundwater contamination either from direct emplacement of oil field brine into the Quaternary deposits aquifer or from infiltration of oil field brine into the Quaternary deposits aquifer. Contaminants, including total dissolved solids and benzene are present in, entering, and are likely to continue to enter the Quaternary deposits aquifer.

73. The Quaternary deposits aquifer is a USDW as defined at 40 C.F.R. §144.3. EPA has collected samples of water from water wells at private homes revealing total dissolved solids and benzene contaminants that pose a threat to human health. The USGS has investigated portions of the East Poplar Oil Field and has found wide-spread contamination in the Quaternary deposits aquifer.

74. Based upon hydrological and geologic data, the direction of groundwater flow in the affected area is toward the City of Poplar and its public water supply wells, thereby threatening any PWS used by persons in and around the City of Poplar, Montana.

75. EPA has determined that Respondents' oil production practices and/or equipment have caused or contributed and/or are continuing to cause or contribute to the endangerment of a USDW.

76. There is an imminent and substantial endangerment to persons in and around the East Poplar Oil Field and in the City of Poplar, Montana.

VII OTHER PREREQUISITES TO ISSUE AN EMERGENCY ADMINISTRATIVE ORDER UNDER THE SAFE DRINKING WATER ACT SECTION 1431

77. EPA consulted with local authorities, the Assiniboine

and Sioux Tribes of the Fort Peck Reservation, prior to issuing this Order. The Tribes have not taken an action to address the issues identified in this Order and support this action.

78. The State of Montana has been consulted by EPA. The State has not taken an action to address the issues identified in this Order.

79. EPA, therefore, finds that the actions ordered below are authorized under Section 1431 of the Act, 42 U.S.C. §300(i), and are necessary in order to protect the health of persons.

VIII EMERGENCY ADMINISTRATIVE ORDER

80. Based upon the foregoing findings of fact, Respondents are hereby ordered, (a) for a minimum of five (5) years from the effective date of this Order, to provide complete domestic use home replacement water meeting primary drinking water standards to homesites listed in Paragraph 82, Table 1, at no cost to the owners and/or residents in each such homesite, in an amount of at least 125 gallons per person per day, except the volume may be different as provided for in Paragraph 83, (b) to identify and monitor the leading edge(s) of the contaminant plume and assess the threat to any PWS used

by persons in and around the City of Poplar, Montana, and (c) to submit documents specified below. In order to achieve these outcomes, Respondents are ordered to complete the three actions described in the ensuing Paragraphs and shall do so according to the schedule and following the procedures set forth in the ensuing Paragraphs.

81. Approval Process: For each PLAN requiring EPA approval under this Order, the following submission and approval process shall occur. (a) Respondents shall submit an initial draft of the Plan to EPA at the address in Paragraph 91 of this Order. (b) EPA shall, within 30 days of receipt of said Plan, either approve the Plan or submit written comments on the Plan to Respondents. (c) Respondents, shall, within 30 days of receipt of EPA's comments on the Plan or approval of the Plan, address EPA's comments or implement the Plan accordingly. If a deadline passes due to EPA's failure to timely submit comments, Respondents shall not be held accountable for such time beyond the deadline accrued due to EPA's failure to timely submit comments. If a deadline passes due to Respondents' failure or refusal to address one or more EPA comment, as determined solely by EPA, Respondents shall be

considered to be in violation of this Order.

ACTION 1. DOMESTIC USE WATER REPLACEMENT AT HOME SITES

82. Respondents shall submit to EPA within 7 days of the effective date of this Order, a commitment to a conceptual plan which, when implemented, shall convey water meeting all primary drinking water standards (40 C.F.R. Part 141, Subpart G) to the addresses in Table 1 in this paragraph. Further, within 30 days of the effective date of this Order, Respondents shall submit to EPA for approval, at the address found in Paragraph 91, a DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN, the implementation of which shall convey water meeting all primary drinking water standards (40 C.F.R. Part 141, Subpart G) to the addresses in Table 1 in this paragraph. The DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall include provisions that ensure that each homesite in Table 1 in this paragraph will have water delivered, for domestic use, directly to the piping in each home for at least five (5) years, such that all pipes in use inside the home shall convey this alternative water, including, as found, water pipes in the homes' kitchens, bathrooms, work rooms, utility rooms, laundry rooms, basements, and outside spigots. The DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall

ensure that alternative water so delivered will be routed through the homes' water heater. Except as allowed for in Paragraph 83, the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall ensure that the yield of domestic use water at each home is, at a minimum, 125 gallons per person per day. If the current residents at each homesite shown in Table 1 in the paragraph have changed, that shall not affect Respondents' obligation to deliver the replacement water. For at least five (5) years, while Respondents are implementing the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN, no homesite owner and/or resident shall be required to pay for any portion of this water replacement. Modifications extending deadlines in this paragraph shall be permissible only with EPA written approval.

TABLE I						
Current Resident	City	State	Residence Address	Sec	Twp	Rge
Kohl, Danny	Poplar	MT	[redacted]			
Lien, Birdell	Poplar	MT				
Zimmerman, Bill	Poplar	MT				
Abbott, Joe	Poplar	MT				
Kim, Audrey	Poplar	MT				
Kim, Michael	Poplar	MT				
Gray Hawk, Rachel	Poplar	MT				
Trottier, Tim & Donna	Poplar	MT				
Lockman. Lyle	Poplar	MT				
Four Bears, Charles	Poplar	MT				
Martell, Rene & Josi	Poplar	MT				
Ricker Sr., George & Helen	Poplar	MT				
Bleazard, Ross & Laura	Poplar	MT				
Whitmer, Warren & Donna	Poplar	MT				
Loegering, Mavis	Poplar	MT				
Kim Sr., Jesse	Poplar	MT				
Grandchamp, Denise	Poplar	MT				
Grainger, Trivian	Poplar	MT				
Grainger, Iva	Poplar	MT				
Ranf, Marie and Corne, Warren	Poplar	MT				

83. If and only if the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN method for water replacement involves periodic delivery by truck or other remote conveyance (i.e. not a pipeline from a PWS), Respondents shall adjust the water delivery volume to each homesite as each homesite's domestic use water needs become known

to Respondents. This shall include adjustments made as seasons change and domestic water use patterns change, and shall include adjustments made in response to any change in the number of inhabitants at each homesite.

84. Initial implementation of the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall occur within 30 days of its final approval by EPA. Initial implementation, for the purpose of this paragraph, means that one homesite in Paragraph 82, Table 1 shall be fully equipped with domestic use replacement water. Final implementation of the DOMESTIC USE HOMESITE WATER REPLACEMENT PLAN shall occur within 90 days of its approval by EPA. Final implementation, for the purpose of this paragraph, means that all homesites in Paragraph 82, Table 1, have been fully equipped with domestic use replacement water. Final implementation also means that water is conveyed to the homesites in Paragraph 82, Table 1, at no cost to them. Modifications extending this schedule shall be permissible only with EPA written approval. Subtractions from the list of homesites found in Paragraph 82, Table 1 shall be permissible only with EPA written approval. Additions to Paragraph 82, Table 1 shall take place at the discretion of EPA, upon learning that additional

homesites found in and around the East Poplar Oil Field with private water supply wells drawing from the Quaternary deposits aquifer have been or are likely to become contaminated with oil field brine and/or hydrocarbons associated with oil and gas production from the East Poplar Oil Field. Additions to the list of homesites found in Paragraph 82, Table 1 will take place as follows. (a) EPA shall write to Respondents with the name and location of the additional homesite(s). (b) Respondents shall, within 30 days receipt of EPA's written notice, ensure that the homesite(s) added shall have replacement water meeting the standards and in the abundance set forth in Paragraph 82.

ACTION 2. PUBLIC WATER SUPPLY (PWS) WELL THREAT STUDY PLAN

85. Respondents shall, within 14 days of the effective date of this Order, submit to EPA at the address in Paragraph 91 for approval, a PWS WELL THREAT STUDY PLAN, the implementation of which shall assess the degree to which all public water supply (PWS) wells used by persons in and around the City of Poplar are threatened by migration of the contaminants at the East Poplar Oil Field. The PWS WELL THREAT STUDY PLAN shall include, at a minimum, the following elements: (a)

electro-magnetic study, or other remote sensing methods, to identify and locate the leading edges of the contaminant plume closest to PWS wells in and around the City of Poplar, (b) groundwater samples, collected quarterly for a minimum of five (5) years, from either existing wells or newly drilled wells screened in the Quaternary deposits aquifer located between the contaminant plume leading edge as mapped by the USGS in 1997 (T28N, R51E, S28) and the City of Poplar, and (c) a calculation of the direction of groundwater flow in the area studied, a calculation of the rate of groundwater movement in the area studied, and a calculated estimate of the amount of time that will pass before the first PWS well will become contaminated along with the name and location of that public water supply well. The electro-magnetic study or other remote sensing method employed shall be able to distinguish between contaminated and uncontaminated groundwater sufficiently precisely that contour lines can be drawn with the total dissolved solids content of the groundwater mapped in gross detail, distinguishing between uncontaminated, mildly contaminated, and very contaminated groundwater. Respondents shall submit a report of the electro-magnetic study or other remote

sensing method employed to EPA at the address in Paragraph 91. This report shall include maps of the results, including contoured lines showing the leading edges of the plume and its closest approach to the City of Poplar. The number of groundwater monitoring wells to be used in the PWS WELL THREAT STUDY PLAN shall be a minimum of six (6) wells, with the final count, location, and depth to be determined during EPA's approval of said PLAN. Analysis of samples collected from each groundwater monitoring well shall include, at a minimum, static water level, pH, TDS, dissolved chloride, dissolved sodium, dissolved calcium, dissolved potassium, dissolved carbonate, dissolved bicarbonate, dissolved magnesium, dissolved sulfate, benzene, toluene, ethylbenzene and total xylenes. Methods used to analyze the samples shall meet or exceed the method detection limits specified in Paragraph 85, Table 2. While implementing the PWS WELL THREAT STUDY PLAN, Respondents shall submit to EPA at the address in Paragraph 91 the analytical results of samples collected at each groundwater monitoring well within 60 days of each sampling event, as well as a report discussing the results of sampling.

TABLE 2		
Analyte Parameter	Method Detection Limit	Units
Static water level	0.1	foot
pH	0.1	pH unit
TDS	10	mg/l
Cl	10	mg/l
Na	10	mg/l
Mg	10	mg/l
K	10	mg/l
CO3	10	mg/l
HCO3	10	mg/l
SO4	10	mg/l
Ca	10	mg/l
Benzene	0.05	mg/l
Toluene	0.05	mg/l
Ethylbenzene	0.05	mg/l
Total xylenes	0.05	mg/l

86. Initial implementation of the PWS WELL THREAT STUDY shall occur within 30 days of its final approval by EPA. Initial implementation, for the purpose of this paragraph, means the electro-magnetic or other remote sensing technique shall have been initiated on the ground, with data collection underway, excluding groundwater monitoring. Intermediate implementation of the PWS WELL THREAT STUDY shall occur within 90 days of its final approval by EPA or by June 30, 2002,

whichever comes earlier. Intermediate implementation, for the purpose of this paragraph, means that the complete collection of all electro-magnetic data or other remotely sensed data, and the first set of water samples from groundwater monitoring wells, shall be completed, with the data results submitted to EPA at the address in Paragraph 91. Final implementation of the PWS WELL THREAT STUDY shall occur within five (5) years of its final approval by EPA or by June 30, 2007, whichever comes earlier. Final implementation, for the purpose of this paragraph, means that all intermediate implementation has occurred and at least five (5) years' worth of quarterly samples have been completed and submitted to EPA as well as a final report summarizing the results of all work done under the EPA-approved PWS WELL THREAT STUDY. Modifications extending this schedule shall be permissible only with EPA written approval.

ACTION 3. DOCUMENT SUBMISSION

87. Respondents shall, within 90 days of the effective date of this Order, submit to EPA at the address in Paragraph 91, a single copy of all documents in their possession relating to the following:

a. All groundwater monitoring sample results,

wellbore descriptions, diagrams of wells, or maps of wells from locations in (1) T28N, R50E; (2) T29N, R50E; (3) T28N, R51E; (4) T29N, R51E; (5) T27N, R50E; and (6) T27N, R51E.

b. All records related to seismic surveys using either detonated explosives or machines to induce seismic propagating waves between 1951 and the present. This includes, but shall not be limited to, all permits obtained for such a survey, all permit applications for such a survey, depth of any holes dug or drilled for detonating explosives, locations of such holes, amount of explosive charge used in each hole, and the amount of energy imparted to the earth during the seismic survey. Interpretations of the seismic results, to the extent they are considered proprietary, need not be submitted.

c. For any current or former wells of any kind, current or former tanks, current or former pipelines, or current or former pits located in T28N, R51E, Sections 5, 6, 7, 8, 17, 18, 19, 20, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36, and located in T27N, R51E, Sections 1, 2, 3, 4, 5, and 6 the following information:

Wells:

For each well, submit

1. Well name and API identification number
2. Well location
3. Current well status for each well.
4. Well construction information
   A. Date well drilled
   B. Date well completed
   C. Total depth
   D. Plug back depth
   E. Drilling record
   F. Completion record (include diagram)
   G. Cementing record (including estimated cement tops with assumptions for calculations and cement bond logs)
5. Well rework information
   A. Date of well rework
   B. Reason for rework (If due to casing leak, location of leak if known)
   C. Records of well logs and tests performed
   D. Record of rework
   E. Date well recommenced injection or production
6. Temporarily abandoned (TA) or Shut-in wells information
   A. Date(s) well shut-in or TA
   B. Reason for TA or shut-in of well
   C. Was well shut-in or TA'd with the equipment in the well?
   D. If not, what equipment was removed and when, (Provide a record of work if possible)
   E. Is the well capable of resuming injection or production without a rework?
7. Well conversion information
   A. Date(s) well converted from production to injection
   B. Date(s) well converted from injection to production
   C. Record of conversion activity
8. Plugging and abandonment information
   A. Plug and abandonment plan
   B. Plugging record
   C. Were any problems experienced during the plugging process, involving such things

as pulling of equipment, setting plugs, water flow to surface?

Tanks:

For each tank, include:

1. Location of tank
2. Tank size (volume) and construction (above ground, below ground, etc.)
3. Duration of tank use
4. Information on leaking tank bottoms or any other type of tank integrity failure(s)
5. Information on spill incidents at or near the tanks and tank batteries, including those from unloading transport trucks into the tanks.

Pipelines:

For each pipeline, submit

1. Location of pipeline (identify as surface or subsurface)
2. Construction material used in pipeline (i.e. steel, fiberglass, etc.)
3. Diameter of pipeline
4. Use of pipeline (i.e. what was transmitted through the pipeline)
5. Present condition of the pipeline
   A. Is the pipeline present?
   B. Is the pipeline buried or above-ground?
   C. Are there leaks in the pipeline?
6. Information on any leaks or spills from pipelines leading to and from the tanks and wells
7. Information on pipeline failures on the surface and subsurface.

Pits:

For each pit used for (i) well construction, (ii) oil and gas production, (iii) well workovers, (iv) product and waste storage, or (v) evaporation and disposal of fluid products and wastes, submit

1. The location of each pit,
2. Usage of each pit,

3. Construction details of pit, including (i) capacity, (ii) height, width, and depth dimensions, (iii) liner used, (iv) other material used in the construction,
4. Date pit was constructed,
5. Date(s) pit was in use,
6. Date pit was abandoned,
7. Volume of material placed in pit over its life.
8. The type and character of material placed in each pit.

88. Paragraph 88, Table 3 summarizes the requirements and schedule for the three actions set forth in Paragraphs 82 through 87.

TABLE 3

Paragraph No. Plan Name (Date First Draft Due)	Minimum Requirements	Implementation Schedule					
		Initial	Minimum Requirements	Intermediate	Minimum Requirements	Final	Minimum Requirements
Paragraph 82 Domestic Use Homesite Water Replacement Plan Conceptual commitment due 7 days from effective date of this Order and detailed Plan due 30 days from effective date of this Order	•125 gallons per person per day per homesite, except if delivered in which case equilibrate water usage with water delivery; • Water meets all primary drinking water standards (40 C.F.R. Part 141, Subpart G); •Water effectively replaces all water in each home for five (5) years	30 days from EPA approval of Plan	At least one homesite has had its water completely replaced	Not applicable	Not applicable	90 days from EPA approval of Plan (except that water must be supplied for at least five (5) years	All homesites in Paragraph 82, Table 1 have had water completely replaced
Paragraph 85 PWS Well Threat Study Plan First draft due 14 days from effective date of this Order	•Use electro-magnetic or other remote sensing method to detect contamination; •Electro-magnetic or other remote sensing method must be capable of distinguishing levels of contamination; •Minimum of six (6) groundwater monitoring wells; •Five (5) years of quarterly water samples from groundwater monitoring wells; •Calculation of groundwater movement direction, rate of movement, and time until nearest PWS well is impacted by contamination	30 days from EPA approval of Plan	Electro-magnetic or other remote sensing method underway with data being collected in the field, excluding groundwater monitoring	90 days from EPA approval of Plan or June 30, 2002, whichever is earlier	•All electro-magnetic or other remote sensing method data has been collected and a report submitted to EPA; •1 set of quarterly water samples has been collected from all groundwater monitoring wells in the Plan and submitted to EPA	Five (5) years from EPA approval of Plan or June 30, 2007, whichever is earlier	•All electro-magnetic or other remote sensing method data has been collected and a report submitted to EPA; •20 sets of quarterly water samples have been collected from all groundwater monitoring wells in the Plan and submitted to EPA with a final report.
Paragraph 87 Document Submission No first draft applicable	•Existing groundwater monitoring results from areas specified •Seismic survey information specified •Well, tank, pit, pipeline data from areas specified	Not applicable	Not applicable	Not applicable	Not applicable	90 days from the effective date of this Order	Submit a single copy to EPA of each applicable record

89. Respondents shall, within 2 days of the effective date of this Order, telephone EPA at the address in Paragraph 91 and acknowledge receipt of this Order and shall follow up this acknowledgment in writing within 5 days of receipt of this Order.

IX GENERAL PROVISIONS

90. All deadlines in this Order specified as days before or after a certain event or requirement are defined as calendar days, unless otherwise stated.

91. Unless otherwise specified, all reports and notifications herein required shall be submitted to:

Nathan Wiser
U.S. Environmental Protection Agency
Office of Enforcement, Compliance
and Environmental Justice
Technical Enforcement Program (8ENF-T)
999 18th Street, Suite 300
Denver, Colorado 80202-2466
Telephone (303) 312-6211

92. The provisions of this Order shall apply to and be binding upon Respondents, their officers, directors, agents, successors and assigns. Notice of this Order shall be given to any successors in interest prior to transfer of any of the oil and gas facilities or their operation. Action or inaction of any persons, firms, contractors, employees, agents, or corporations acting under, through or for Respondents, shall not excuse any

failure of Respondents to fully perform their obligations under this Order.

93. This Order does not constitute a waiver, suspension, or modification of the requirements of any federal statute, regulation, or condition of any permit issued thereunder, including the requirements of the Safe Drinking Water Act, which remain in full force and effect. Issuance of this Order is not a waiver by EPA to forego any additional administrative, civil, or criminal action(s) otherwise authorized under the Act.

94. Violation of any term of this Order may subject Respondents to an administrative civil penalty of up to $15,000 for each day in which such violation occurs or failure to comply continues, pursuant to §1431(b) of the Act, 42 U.S.C. §300i(b). In addition, actions or omissions which violate any requirements of the SDWA or its implementing regulations may subject Respondents to a civil penalty of not more than $27,500 per day per violation pursuant to §1423 of the Act, 42 U.S.C. §300h-2.

95. This Emergency Administrative Order is a final agency action by EPA.

96. This Emergency Administrative Order is binding on all Respondents, and each Respondent is jointly and

severally liable hereunder.

97. The effective date of this Order shall be three (3) business days from the date of issuance, not including the day of issuance.

Issued this 20th day of September, 2001.

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program
Office of Enforcement, Compliance,
and Environmental Justice
United States Environmental Protection
Agency, Region 8

David J. Janik

Michael T. Risher, Director
David J. Janik, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance,
and Environmental Justice
United States Environmental Protection
Agency, Region 8

EXHIBIT 1

Summary of Chemical Analytical Results:

East Poplar Oil Field

January 1999 through September 2000

Samples collected and analyzed under the direction of EPA

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
				DRO = diesel range organic compounds (typically C-1 through C-30)			
				dup = duplicate sample			
				HC = hydrocarbon			
				SVOC = semivolatile organic compounds			
				TDS = total dissolved solids (salinity)			
				TPH = total petroleum hydrocarbons			
				VOC = volatile organic compounds			
Abbott Joe	11/09/99	M-2	5540	DRO	<	0.50000	Energy Labs
Abbott Joe	11/09/99	M-2	5540	TDS		1,170.00000	Energy Labs
Abbott Joe	11/09/99	M-2	5540	VOC	<	0.00050	Energy Labs
Abbott Joe	01/04/00	M-2	5540	TDS		1,260.00000	Region 8
Abbott Joe	01/04/00	M-2	5540	TPH	<	100.00000	Region 8
Abbott Joe	01/04/00	M-2	5540	VOC	<	0.00100	Region 8
Abbott Joe	09/28/00	M-2	5540	DRO	<	0.50000	Energy Labs
Abbott Joe	09/28/00	M-2	5540	SVOC	<	0.00200	Energy Labs
Abbott Joe	09/28/00	M-2	5540	TDS		1,100.00000	Energy Labs
Abbott Joe	09/28/00	M-2	5540	VOC	<	0.00050	Energy Labs
City of Poplar Well 1	09/28/00			DRO	<	0.50000	Energy Labs
City of Poplar Well 1	09/28/00			SVOC	<	0.00200	Energy Labs
City of Poplar Well 1	09/28/00			TDS		1,050.00000	Energy Labs
City of Poplar Well 1	09/28/00			Total Extractable HC		0.47000	Energy Labs
City of Poplar Well 1	09/28/00			VOC	<	0.00050	Energy Labs
City of Poplar Well 2	09/28/00			DRO	<	0.50000	Energy Labs
City of Poplar Well 2	09/28/00			SVOC	<	0.00200	Energy Labs
City of Poplar Well 2	09/28/00			TDS		1,190.00000	Energy Labs
City of Poplar Well 2	09/28/00			VOC - bromodichloromethane		0.00110	Energy Labs
City of Poplar Well 2	09/28/00			VOC - bromodichloromethane		0.00096	Energy Labs
City of Poplar Well 2	09/28/00			VOC - bromoform		0.00140	Energy Labs
City of Poplar Well 2	09/28/00			VOC - chlorodibromomethane		0.00160	Energy Labs
City of Poplar Well 2	09/28/00			VOC - chlorodibromomethane		0.00044	Energy Labs
City of Poplar Well 2	09/28/00			VOC - chloroform		0.00048	Energy Labs
City of Poplar Well 2	09/28/00			VOC - chloroform		0.00130	Energy Labs
City of Poplar Well 3	01/11/00			TPH		125.00000	Region 8
City of Poplar Well 3	01/11/00			TPH - dup		193.00000	Region 8
City of Poplar Well 3	01/11/00			VOC - 1,4-dichlorobenzene		0.00069	Region 8

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
City of Poplar Well 3	01/11/00			VOC - 1,4-dichlorobenzene		0.00072	Region 8
City of Poplar Well 3	01/11/00			VOC - 1,4-dichlorobenzene		0.00058	Region 8
City of Poplar Well 3	01/11/00			VOC - 1,4-dichlorobenzene		0.00098	Region 8
City of Poplar Well 3	01/11/00			VOC - bromodichloromethane		0.00140	Region 8
City of Poplar Well 3	01/11/00			VOC - bromodichloromethane		0.00140	Region 8
City of Poplar Well 3	01/11/00			VOC - bromodichloromethane		0.00080	Region 8
City of Poplar Well 3	01/11/00			VOC - bromodichloromethane		0.00090	Region 8
City of Poplar Well 3	01/11/00			VOC - bromoform		0.00200	Region 8
City of Poplar Well 3	01/11/00			VOC - bromoform		0.00120	Region 8
City of Poplar Well 3	01/11/00			VOC - bromoform		0.01650	Region 8
City of Poplar Well 3	01/11/00			VOC - bromoform		0.01720	Region 8
City of Poplar Well 3	01/11/00			VOC - chloroform		0.00070	Region 8
City of Poplar Well 3	01/11/00			VOC - chloroform		0.00070	Region 8
City of Poplar Well 3	01/11/00			VOC - chloroform		0.00060	Region 8
City of Poplar Well 3	01/11/00			VOC - dibromochloromethane		0.00300	Region 8
City of Poplar Well 3	01/11/00			VOC - dibromochloromethane		0.00140	Region 8
City of Poplar Well 3	01/11/00			VOC - dibromochloromethane		0.00310	Region 8
City of Poplar Well 3	01/11/00			VOC - dibromochloromethane		0.00110	Region 8
City of Poplar Well 3	01/11/00			VOC - methylene chloride		0.00110	Region 8
City of Poplar Well 3	01/11/00			VOC - methylene chloride		0.00110	Region 8
City of Poplar Well 3	01/11/00			VOC - methylene chloride		0.00110	Region 8
City of Poplar Well 3	01/11/00			VOC - methylene chloride		0.00120	Region 8
City of Poplar Well 3	09/28/00			DRO	<	0.50000	Energy Labs
City of Poplar Well 3	09/28/00			SVOC	<	0.00200	Energy Labs
City of Poplar Well 3	09/28/00			TDS		1,050.00000	Energy Labs
Corne Butch	11/22/99	M-17	5743	DRO	<	0.50000	Energy Labs
Corne Butch	11/22/99	M-17	5743	TDS		2,130.00000	Energy Labs
Corne Butch	11/22/99	M-17	5743	VOC	<	0.00050	Energy Labs
Corne Butch	01/04/00	M-17	5743	TDS		2,304.00000	Region 8
Corne Butch	01/04/00	M-17	5743	TPH	<	100.00000	Region 8
Corne Butch	01/04/00	M-17	5743	VOC - 1,4-dichlorobenzene		0.00083	Region 8
Corne Butch	09/20/00	M-17	5743	DRO	<	0.50000	Energy Labs
Corne Butch	09/20/00	M-17	5743	SVOC	<	0.00200	Energy Labs
Corne Butch	09/20/00	M-17	5743	TDS		2,190.00000	Energy Labs
Corne Butch	09/20/00	M-17	5743	VOC - Chloroform		0.00610	Energy Labs
Corne Butch	09/20/00	M-17	5743	VOC - Chloroform dup		0.00550	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - bromodichloromethane		0.00440	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - bromodichloromethane		0.00380	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - bromoform		0.00110	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - bromoform		0.00099	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - chlorodibromomethane		0.00280	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - chlorodibromomethane		0.00330	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - chloroform		0.00440	Energy Labs
Equipment Blank w/PSA Building water - Ft. Peck Tribe	01/27/99			VOC - chloroform		0.00440	Energy Labs
Four Bear Charles	11/09/99	M-24	5678	DRO	<	0.50000	Energy Labs
Four Bear Charles	11/09/99	M-24	5678	TDS		14,300.00000	Energy Labs
Four Bear Charles	11/09/99	M-24	5678	VOC - Chloroform		0.00037	Energy Labs
Four Bear Charles	01/03/00	M-24	5678	TPH	<	100.00000	Region 8
Four Bear Charles	01/03/00	M-24	5678	VOC - 1,4dichlorobenzene		0.00068	Region 8
Four Bear Charles	09/20/00	M-24	5678	DRO	<	0.50000	Energy Labs
Four Bear Charles	09/20/00	M-24	5678	SVOC	<	0.00200	Energy Labs
Four Bear Charles	09/20/00	M-24	5678	TDS		17,000.00000	Energy Labs
Four Bear Charles	09/20/00	M-24	5678	VOC	<	0.00050	Energy Labs
Grainger Iva	11/10/99	M-53	5128	DRO	<	0.50000	Energy Labs
Grainger Iva	11/10/99	M-53	5128	TDS		1,840.00000	Energy Labs
Grainger Iva	11/10/99	M-53	5128	VOC	<	0.00050	Energy Labs
Grainger Iva	01/04/00	M-53	5128	TDS		1,646.00000	Region 8
Grainger Iva	01/04/00	M-53	5128	TPH	<	100.00000	Region 8
Grainger Iva	01/04/00	M-53	5128	VOC - 1,4-dichlorobenzene		0.00059	Region 8

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Grainger Iva	09/28/00	M-53	5128	DRO	<	0.50000	Energy Labs
Grainger Iva	09/28/00	M-53	5128	SVOC	<	0.00200	Energy Labs
Grainger Iva	09/28/00	M-53	5128	TDS		1,370.00000	Energy Labs
Grainger Iva	09/28/00	M-53	5128	VOC	<	0.00050	Energy Labs
Grainger Trivian	01/04/00	M-38	5957	TDS		2,790.00000	Region 8
Grainger Trivian	01/04/00	M-38	5957	TPH	<	100.00000	Region 8
Grainger Trivian	01/04/00	M-38	5957	VOC - 1,4-dichlorobenzene		0.00075	Region 8
Grainger Trivian	09/29/00	M-38	5957	DRO	<	0.50000	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	DRO	<	0.50000	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	SVOC	<	0.00200	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	SVOC	<	0.00200	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	TDS		2,740.00000	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	TDS		2,660.00000	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	VOC	<	0.00050	Energy Labs
Grainger Trivian	09/29/00	M-38	5957	VOC	<	0.00050	Energy Labs
Grainger Trivian	11/09 + 17/99	M-38	5957	DRO	<	0.00050	Energy Labs
Grainger Trivian	11/09 + 17/99	M-38	5957	DRO	<	0.50000	Energy Labs
Grainger Trivian	11/09 + 17/99	M-38	5957	TDS		2,590.00000	Energy Labs
Grainger Trivian	11/09 + 17/99	M-38	5957	TDS		2,640.00000	Energy Labs
Grainger Trivian	11/09 + 17/99	M-38	5957	VOC	<	0.00050	Energy Labs
Grainger Trivian	11/09 + 17/99	M-38	5957	VOC - Chloroform		0.00057	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	DRO	<	0.50000	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	DRO	<	0.50000	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	TDS		2,740.00000	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	TDS		2,520.00000	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	VOC - Chloroform		0.00038	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	VOC - Chloroform		0.00041	Energy Labs
Grandchamp Denise	11/09/99	M-36	5947	VOC - Toluene		0.00067	Energy Labs
Grandchamp Denise	01/04/00	M-36	5947	TDS		2,643.00000	Region 8
Grandchamp Denise	01/04/00	M-36	5947	TPH	<	100.00000	Region 8
Grandchamp Denise	01/04/00	M-36	5947	VOC - 1,4-dichlorobenzene		0.00070	Region 8
Grandchamp Denise	09/29/00	M-36	5947	DRO	<	0.50000	Energy Labs
Grandchamp Denise	09/29/00	M-36	5947	DRO	<	0.50000	Energy Labs
Grandchamp Denise	09/29/00	M-36	5947	SVOC	<	0.00200	Energy Labs
Grandchamp Denise	09/29/00	M-36	5947	SVOC	<	0.00200	Energy Labs
Grandchamp Denise	09/29/00	M-36	5947	TDS		2,640.00000	Energy Labs
Grandchamp Denise	09/29/00	M-36	5947	TDS		2,690.00000	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Grandchamp Denise	09/29/00	M-36	5947	VOC	<	0.00050	Energy Labs
Grandchamp Denise	09/29/00	M-36	5947	VOC	<	0.00050	Energy Labs
Hendrickson Roman	11/09/99	M-32	5866	DRO	<	0.50000	Energy Labs
Hendrickson Roman	11/09/99	M-32	5866	DRO	<	0.50000	Energy Labs
Hendrickson Roman	11/09/99	M-32	5866	TDS		1,730.00000	Energy Labs
Hendrickson Roman	11/09/99	M-32	5866	TDS		1,750.00000	Energy Labs
Hendrickson Roman	11/09/99	M-32	5866	VOC	<	0.00050	Energy Labs
Hendrickson Roman	11/09/99	M-32	5866	VOC	<	0.00050	Energy Labs
Hopkins Shannon	11/09/99	M-15	5647	DRO	<	0.50000	Energy Labs
Hopkins Shannon	11/09/99	M-15	5647	TDS		8,350.00000	Energy Labs
Hopkins Shannon	11/09/99	M-15	5647	VOC - Chloroform		0.00036	Energy Labs
Hopkins Shannon	11/09/99	M-15	5647	VOC - Naphthalene		0.00042	Energy Labs
Hopkins Shannon	01/03/00	M-15	5647	TPH	<	100.00000	Region 8
Hopkins Shannon	09/20/00	M-15	5647	DRO	<	0.50000	Energy Labs
Hopkins Shannon	09/20/00	M-15	5647	SVOC	<	0.00200	Energy Labs
Hopkins Shannon	09/20/00	M-15	5647	TDS		9,850.00000	Energy Labs
Hopkins Shannon	09/20/00	M-15	5647	VOC - Naphthlalene		0.00039	Energy Labs
Injection Well - Huber #5D	09/29/00			DRO		28.00000	Energy Labs
Injection Well - Huber #5D	09/29/00			DRO		38.00000	Energy Labs
Injection Well - Huber #5D	09/29/00			SVOC	<	0.04000	Energy Labs
Injection Well - Huber #5D	09/29/00			SVOC	<	0.04000	Energy Labs
Injection Well - Huber #5D	09/29/00			TDS		87,500.00000	Energy Labs
Injection Well - Huber #5D	09/29/00			TDS		85,900.00000	Energy Labs
Injection Well - Huber #5D	09/29/00			Total Extractable HC		39.00000	Energy Labs
Injection Well - Huber #5D	09/29/00			Total Extractable HC		53.00000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - 1,2,4-trimethylbenzene		0.07000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - 1,2,4-trimethylbenzene		0.08700	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - 1,3,5-trimethylbenzene		0.02800	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - 1,3,5-trimethylbenzene		0.02200	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - benzene		1.76000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - benzene		1.75000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - ethylbenzene		0.15000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - ethylbenzene		0.18100	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - isopropylbenzene		0.01100	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - isopropylbenzene		0.00840	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - n-propylbenzene		0.01500	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - n-propylbenzene		0.01900	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Injection Well - Huber #5D	09/29/00			VOC - naphthalene		0.03600	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - naphthalene		0.03400	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - toluene		1.83000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - toluene		1.86000	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - xylene total		0.54600	Energy Labs
Injection Well - Huber #5D	09/29/00			VOC - xylene total		0.46500	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		DRO		49.00000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		DRO		51.00000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		SVOC - bis(2-ethylhexyl) phthalate		0.05300	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		SVOC - bis(2-ethylhexyl) phthalate		0.04900	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		TDS		120,000.00000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		TDS		120,000.00000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		Total Extractable HC		65.00000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		Total Extractable HC		67.00000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - 1,2,4-trimethylbenzene		0.05600	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - 1,3,5-trimethylbenzene		0.01900	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - 1,3,5-trimethylbenzene		0.01900	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - benzene		1.71000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - benzene		1.67000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - ethylbenzene		0.11500	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - ethylbenzene		0.12200	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - isopropylbenzene		0.00710	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - isopropylbenzene		0.00660	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - n-propylbenzene		0.01300	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - n-propylbenzene		0.01200	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - naphthalene		0.02300	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - naphthalene		0.02300	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - toluene		1.53000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - toluene		1.53000	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - xylene total		0.39600	Energy Labs
Injection Well - Murphy # 1D	09/29/00	Murphy 1D		VOC - xylene total		0.14600	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	DRO	<	0.50000	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	DRO	<	0.50000	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	TDS		2,390.00000	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	TDS		2,460.00000	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	VOC	<	0.00050	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	VOC - 1,4 Dichlorobenzene		0.00082	Energy Labs
Kirn Audrey	11/02/99	M-3	5584	VOC - 1,4 Dichlorobenzene dup		0.00094	Energy Labs
Kirn Audrey	01/04/00	M-3	5584	TDS		2,520.00000	Region 8
Kirn Audrey	01/04/00	M-3	5584	TPH	<	100.00000	Region 8
Kirn Audrey	01/04/00	M-3	5584	VOC - 1,4-dichlorobenzene		0.00119	Region 8
Kirn Audrey	09/21/00	M-3	5584	DRO	<	0.50000	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	DRO	<	0.50000	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	SVOC	<	0.00200	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	SVOC	<	0.00200	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	TDS		2,460.00000	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	TDS		2,470.00000	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	VOC	<	0.00050	Energy Labs
Kirn Audrey	09/21/00	M-3	5584	VOC	<	0.00050	Energy Labs
Kirn Jesse	11/10/99	M-34	6037	DRO	<	0.50000	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Kirn Jesse	11/10/99	M-34	6037	TDS		761.00000	Energy Labs
Kirn Jesse	11/10/99	M-34	6037	VOC	<	0.00050	Energy Labs
Kirn Jesse	11/22/99	M-34	6037	DRO	<	0.50000	Energy Labs
Kirn Jesse	11/22/99	M-34	6037	TDS		770.00000	Energy Labs
Kirn Jesse	01/03/00	M-34	6037	TPH	<	100.00000	Region 8
Kirn Jesse	09/20/00	M-34	6037	DRO	<	0.50000	Energy Labs
Kirn Jesse	09/20/00	M-34	6037	SVOC	<	0.00200	Energy Labs
Kirn Jesse	09/20/00	M-34	6037	TDS		785.00000	Energy Labs
Kirn Jesse	09/20/00	M-34	6037	VOC	<	0.00050	Energy Labs
Kirn Michael	11/02/99	M-13	5632	DRO	<	0.50000	Energy Labs
Kirn Michael	11/02/99	M-13	5632	DRO	<	0.50000	Energy Labs
Kirn Michael	11/02/99	M-13	5632	TDS		5,120.00000	Energy Labs
Kirn Michael	11/02/99	M-13	5632	TDS		4,900.00000	Energy Labs
Kirn Michael	11/02/99	M-13	5632	VOC	<	0.00050	Energy Labs
Kirn Michael	11/02/99	M-13	5632	VOC	<	0.00050	Energy Labs
Kirn Michael	01/04/00	M-13	5632	TDS		5,058.00000	Region 8
Kirn Michael	01/04/00	M-13	5632	TPH	<	100.00000	Region 8
Kirn Michael	01/04/00	M-13	5632	TPH - dup	<	100.00000	Region 8
Kirn Michael	01/04/00	M-13	5632	VOC - 1,4-dichlorobenzene		0.00050	Region 8
Kirn Michael	09/21/00	M-13	5632	DRO	<	0.50000	Energy Labs
Kirn Michael	09/21/00	M-13	5632	DRO	<	0.50000	Energy Labs
Kirn Michael	09/21/00	M-13	5632	SVOC	<	0.00200	Energy Labs
Kirn Michael	09/21/00	M-13	5632	SVOC	<	0.00200	Energy Labs
Kirn Michael	09/21/00	M-13	5632	TDS		5,070.00000	Energy Labs
Kirn Michael	09/21/00	M-13	5632	VOC	<	0.00050	Energy Labs
Kirn Michael	09/21/00	M-13	5632	TDS		5,860.00000	Energy Labs
Kirn Michael	09/21/00	M-13	5632	VOC	<	0.00050	Energy Labs
Kirn Michael	09/21/00	M-13	5632	VOC - dup	<	0.00050	Energy Labs
Kohl Danny	11/02/99	M-52	5097	DRO	<	0.50000	Energy Labs
Kohl Danny	11/02/99	M-52	5097	TDS		1,610.00000	Energy Labs
Kohl Danny	11/02/99	M-52	5097	VOC	<	0.00050	Energy Labs
Kohl Danny	01/04/00	M-52	5097	TPH	<	100.00000	Region 8
Kohl Danny	01/04/00	M-52	5097	VOC - 1,4-dichlorobenzene		0.00061	Region 8
Kohl Danny	09/20/00	M-52	5097	DRO	<	0.50000	Energy Labs
Kohl Danny	09/20/00	M-52	5097	SVOC	<	0.00200	Energy Labs
Kohl Danny	09/20/00	M-52	5097	TDS		1,580.00000	Energy Labs
Kohl Danny	09/20/00	M-52	5097	VOC	<	0.00050	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Lien Birdell	11/09/99	W-3	4849	DRO	<	0.50000	Energy Labs
Lien Birdell	11/09/99	W-3	4849	TDS		820.00000	Energy Labs
Lien Birdell	11/09/99	W-3	4849	VOC - Chloroform		0.00051	Energy Labs
Lien Birdell	11/22/99	W-3	4849	DRO	<	0.50000	Energy Labs
Lien Birdell	11/22/99	W-3	4849	TDS		850.00000	Energy Labs
Lien Birdell	11/22/99	W-3	4849	VOC	<	0.00050	Energy Labs
Lien Birdell	01/04/00	W-3	4849	TDS		971.00000	Region 8
Lien Birdell	01/04/00	W-3	4849	TPH	<	100.00000	Region 8
Lien Birdell	01/04/00	W-3	4849	VOC - 1,4-dichlorobenzene		0.00060	Region 8
Lien Birdell	09/20/00	W-3	4849	DRO	<	0.50000	Energy Labs
Lien Birdell	09/20/00	W-3	4849	DRO	<	0.50000	Energy Labs
Lien Birdell	09/20/00	W-3	4849	SVOC	<	0.00200	Energy Labs
Lien Birdell	09/20/00	W-3	4849	SVOC	<	0.00200	Energy Labs
Lien Birdell	09/20/00	W-3	4849	TDS		849.00000	Energy Labs
Lien Birdell	09/20/00	W-3	4849	TDS		878.00000	Energy Labs
Lien Birdell	09/20/00	W-3	4849	VOC	<	0.00050	Energy Labs
Lien Birdell	09/20/00	W-3	4849	VOC	<	0.00050	Energy Labs
Lockman Lyle 'Curly'	11/09/99	M-30	5715	DRO	<	0.50000	Energy Labs
Lockman Lyle 'Curly'	11/09/99	M-30	5715	DRO	<	0.50000	Energy Labs
Lockman Lyle 'Curly'	11/09/99	M-30	5715	TDS		1,630.00000	Energy Labs
Lockman Lyle 'Curly'	11/09/99	M-30	5715	TDS		1,770.00000	Energy Labs
Lockman Lyle 'Curly'	11/09/99	M-30	5715	VOC	<	0.00050	Energy Labs
Lockman Lyle 'Curly'	11/09/99	M-30	5715	VOC - Chloroform		0.00030	Energy Labs
Lockman Lyle 'Curly'	01/03/00	M-30	5715	TDS		1,915.00000	Region 8
Lockman Lyle 'Curly'	01/03/00	M-30	5715	TDS		1,828.00000	Region 8
Lockman Lyle 'Curly'	01/03/00	M-30	5715	TPH	<	100.00000	Region 8
Lockman Lyle 'Curly'	01/03/00	M-30	5715	TPH	<	100.00000	Region 8
Lockman Lyle 'Curly'	01/03/00	M-30	5715	VOC - 1,4-dichlorobenzene		0.00057	Region 8
Lockman Lyle 'Curly'	09/20/00	M-30	5715	DRO	<	0.50000	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	DRO	<	0.50000	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	SVOC	<	0.00200	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	SVOC	<	0.00200	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	TDS		1,710.00000	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	TDS		1,880.00000	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	VOC	<	0.00050	Energy Labs
Lockman Lyle 'Curly'	09/20/00	M-30	5715	VOC	<	0.00050	Energy Labs
Loegering Mavis	11/09/99	M-33	5910	DRO	<	0.50000	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Loegering Mavis	11/09/99	M-33	5910	TDS		435.00000	Energy Labs
Loegering Mavis	11/09/99	M-33	5910	VOC	<	0.00050	Energy Labs
Loegering Mavis	01/03/00	M-33	5910	TDS		467.00000	Region 8
Loegering Mavis	01/03/00	M-33	5910	TPH	<	100.00000	Region 8
Loegering Mavis	01/03/00	M-33	5910	VOC - 1,4-dichlorobenzene		0.00072	Region 8
Loegering Mavis	09/21/00	M-33	5910	DRO	<	0.50000	Energy Labs
Loegering Mavis	09/21/00	M-33	5910	SVOC	<	0.00200	Energy Labs
Loegering Mavis	09/21/00	M-33	5910	TDS		433.00000	Energy Labs
Loegering Mavis	09/21/00	M-33	5910	VOC	<	0.00050	Energy Labs
Martell Rene Youpee Josi	11/09/99	M-22	5666	DRO	<	0.50000	Energy Labs
Martell Rene Youpee Josi	11/09/99	M-22	5666	TDS		14,600.00000	Energy Labs
Martell Rene Youpee Josi	11/09/99	M-22	5666	VOC - Chloroform		0.00028	Energy Labs
Martell Rene Youpee Josi	01/03/00	M-22	5666	TPH	<	100.00000	Region 8
Martell Rene Youpee Josi	01/03/00	M-22	5666	VOC - 1,4-dichlorobenzene		0.00058	Region 8
Martell Rene Youpee Josi	09/20/00	M-22	5666	DRO	<	0.50000	Energy Labs
Martell Rene Youpee Josi	09/20/00	M-22	5666	SVOC	<	0.00200	Energy Labs
Martell Rene Youpee Josi	09/20/00	M-22	5666	TDS		16,100.00000	Energy Labs
Martell Rene Youpee Josi	09/20/00	M-22	5666	VOC	<	0.00050	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - 1,4-dichlorobenzene		0.00049	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - 1,4-dichlorobenzene		0.00046	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - bromodichloromethane		0.00420	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - bromodichloromethane		0.00390	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - bromoform		0.00140	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - bromoform		0.00120	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - chlorodibromomethane		0.00290	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - chlorodibromomethane		0.00300	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - chloroform		0.00420	Energy Labs
PSA Building raw water - Ft . Peck Tribe	01/27/99			VOC - chloroform		0.00400	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
QAQC	01/04/00		5632	VOC - 1,4-dichlorobenzene		0.00061	Region 8
QAQC Blank	12/02/99			TDS	<	5.00000	Region 8
QAQC Trip Blank	01/28/99			VOC	<	0.00050	Energy Labs
QAQC Trip Blank	11/02/99			VOC	<	0.00050	Energy Labs
QAQC Trip Blank	12/23/99			VOC	<	0.00100	Energy Labs
QAQC Trip Blank	09/20/00			VOC	<	0.00050	Energy Labs
QAQC Trip Blank Huber # 5D	09/29/00			VOC	<	0.00050	Energy Labs
QAQC Trip Blank Murphy # 1D	09/29/00			VOC	<	0.00050	Energy Labs
Richards Trish Travis	11/17/99		5021	DRO	<	0.50000	Energy Labs
Richards Trish Travis	11/17/99		5021	DRO	<	0.50000	Energy Labs
Richards Trish Travis	11/17/99		5021	TDS		1,860.00000	Energy Labs
Richards Trish Travis	11/17/99		5021	TDS	<	0.00050	Energy Labs
Richards Trish Travis	11/17/99		5021	TDS		1,990.00000	Energy Labs
Richards Trish Travis	11/17/99		5021	VOC	<	0.00050	Energy Labs
Richards Trish Travis	01/04/00		5021	TDS		1,986.00000	Region 8
Richards Trish Travis	01/04/00		5021	TPH	<	100.00000	Region 8
Richards Trish Travis	01/04/00		5021	VOC - 1,4-dichlorobenzene		0.00058	Region 8
Ricker George Helen	03/11/99	M-25	5712	DRO	<	0.50000	Energy Labs
Ricker George Helen	06/30/99	M-25	5712	DRO	<	0.50000	Energy Labs
Ricker George Helen	06/30/99	M-25	5712	TDS		4,890.00000	Energy Labs
Ricker George Helen	06/30/99	M-25	5712	VOC	<	0.00050	Energy Labs
Ricker George Helen	11/09/99	M-25	5712	DRO	<	0.50000	Energy Labs
Ricker George Helen	11/09/99	M-25	5712	TDS		4,450.00000	Energy Labs
Ricker George Helen	11/09/99	M-25	5712	VOC	<	0.00050	Energy Labs
Ricker George Helen	01/03/00	M-25	5712	TPH	<	100.00000	Region 8
Ricker George Helen	01/03/00	M-25	5712	VOC - 1,4-dichlorobenzene		0.00056	Region 8
Ricker George Helen	09/21/00	M-25	5712	DRO	<	0.50000	Energy Labs
Ricker George Helen	09/21/00	M-25	5712	SVOC	<	0.00200	Energy Labs
Ricker George Helen	09/21/00	M-25	5712	SVOC - dup	<	0.00200	Energy Labs
Ricker George Helen	09/21/00	M-25	5712	TDS		5,840.00000	Energy Labs
Ricker George Helen	09/21/00	M-25	5712	VOC	<	0.00050	Energy Labs
Trottier Tim	01/27/99	M-29	5713	Benzene		0.07800	Energy Labs
Trottier Tim	01/27/99	M-29	5713	Benzene		0.05800	Energy Labs
Trottier Tim	01/27/99	M-29	5713	Methylene chloride		0.00170	Energy Labs
Trottier Tim	01/27/99	M-29	5713	Methylene chloride		0.00180	Energy Labs

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Trottier Tim	03/11/99	M-30	5712	DRO	<	0.50000	Energy Labs
Trottier Tim	03/11/99	M-30	5712	VOC	<	0.00050	Energy Labs
Trottier Tim	06/30/99	M-30	5712	DRO	<	0.50000	Energy Labs
Trottier Tim	06/30/99	M-30	5712	TDS		1,850.00000	Energy Labs
Trottier Tim	06/30/99	M-30	5712	VOC	<	0.00050	Energy Labs
Trottier Tim	11/09/99	M-30	5713	Chloroform		0.00036	Energy Labs
Trottier Tim	11/09/99	M-30	5713	DRO	<	0.50000	Energy Labs
Trottier Tim	11/09/99	M-30	5713	DRO	<	0.50000	Energy Labs
Trottier Tim	11/09/99	M-30	5713	TDS		1,840.00000	Energy Labs
Trottier Tim	11/09/99	M-30	5713	TDS		1,820.00000	Energy Labs
Trottier Tim	11/22/99	M-30	5713	DRO	<	0.50000	Energy Labs
Trottier Tim	11/22/99	M-30	5713	TDS		1,620.00000	Energy Labs
Trottier Tim	11/22/99	M-30	5713	VOC	<	0.00050	Energy Labs
Trottier Tim	01/03/00	M-30	5713	TDS		1,767.00000	Region 8
Trottier Tim	01/03/00	M-30	5713	TDS		1,964.00000	Region 8
Trottier Tim	01/03/00	M-30	5713	TPH	<	100.00000	Region 8
Trottier Tim	01/03/00	M-30	5713	TPH	<	100.00000	Region 8
Trottier Tim	01/03/00	M-30	5713	VOC - 1,4-dichlorobenzene		0.00101	Region 8
Trottier Tim	09/29/00	M-30	5713	DRO	<	0.50000	Energy Labs
Trottier Tim	09/29/00	M-30	5713	DRO	<	0.50000	Energy Labs
Trottier Tim	09/29/00	M-30	5713	SVOC	<	0.00200	Energy Labs
Trottier Tim	09/29/00	M-30	5713	SVOC	<	0.00200	Energy Labs
Trottier Tim	09/29/00	M-30	5713	TDS		1,760.00000	Energy Labs
Trottier Tim	09/29/00	M-30	5713	TDS		1,820.00000	Energy Labs
Trottier Tim	09/29/00	M-30	5713	VOC	<	0.00050	Energy Labs
Trottier Tim	09/29/00	M-30	5713	VOC	<	0.00050	Energy Labs
Whitmer Donna Warren	03/11/99		58702	DRO	<	0.50000	Energy Labs
Whitmer Donna Warren	03/11/99		58702	VOC	<	0.00050	Energy Labs
Whitmer Donna Warren	06/30/99		58702	DRO	<	0.50000	Energy Labs
Whitmer Donna Warren	06/30/99		58702	TDS		1,950.00000	Energy Labs
Whitmer Donna Warren	06/30/99		58702	VOC	<	0.00050	Energy Labs
Whitmer Donna Warren	11/09/99		58702	DRO	<	0.50000	Energy Labs
Whitmer Donna Warren	11/09/99		58702	TDS		1,920.00000	Energy Labs
Whitmer Donna Warren	11/09/99		58702	VOC - Chloroform		0.00040	Energy Labs
Whitmer Donna Warren	11/09/99		58702	VOC - Chloroform		0.00028	Energy Labs
Whitmer Donna Warren	01/03/00		58702	TDS		1,970.00000	Region 8
Whitmer Donna Warren	01/03/00		58702	TPH	<	100.00000	Region 8

Residence Name - Sample Site	Sample Date	USGS Well Numbering System	P Address Numbering System	Target Analytical Compounds	Below Detection Limit	Results in mg/l	Laboratory where analyzed
Whitmer Donna Warren	01/03/00		58702	VOC - 1,4-dichlorobenzene		0.00067	Region 8
Whitmer Donna Warren	09/20/00		58702	DRO	<	0.50000	Energy Labs
Whitmer Donna Warren	09/20/00		58702	SVOC	<	0.00200	Energy Labs
Whitmer Donna Warren	09/20/00		58702	TDS		2,120.00000	Energy Labs
Whitmer Donna Warren	09/20/00		58702	VOC	<	0.00050	Energy Labs
Zimmerman Bill	09/28/00	M-1	5448	DRO	<	0.50000	Energy Labs
Zimmerman Bill	09/28/00	M-1	5448	SVOC	<	0.00200	Energy Labs
Zimmerman Bill	09/28/00	M-1	5448	TDS		2,870.00000	Energy Labs
Zimmerman Bill	09/28/00	M-1	5448	VOC	<	0.00050	Energy Labs

EXHIBIT 2

Summary of Spills:

East Poplar Oil Field

February 1976 through April 2001

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Flowline developed a leak caused by external corrosion	28N	51 E	3	1.00	0.0	02/01/76	02/12/76
Murphy Exploration and Production Co.	Leak from a flowline due to external corrosion	28N	51 E	3	1.00	0.0	02/01/76	02/12/76
Murphy Exploration and Production Co.	Flow line from well EPU #12 to "F" Battery developed a leak caused by external corrosion	28N	51E	3	1.00	0.0	02/01/76	02/10/76
Murphy Exploration and Production Co.	Oil spilled from a corrosion hole in a 3-1/2 inch tank battery shipping line	29N	51 E	29	8.00	0.0	02/19/76	03/01/76
Murphy Exploration and Production Co.	Corrosion ate a hole in 3 -1/2 inch "J" Battery shipping Line	29N	51E	29	8.00	0.0	02/19/76	02/20/76
Murphy Exploration and Production Co.	Flowline leak on well EPU #15 flowline	28N	51E	11	1.00	8.0	03/20/76	03/20/76
Murphy Exploration and Production Co.	Flowline leak on EPU # 15 well, 150 yards east	28N	51 E	11	1.00	8.0	03/20/76	03/25/76
Murphy Exploration and Production Co.	Salt water disposal pump broke down causing water to go to pit and pit overflowed	28N	51 E	10	0.00	9.5	11/23/76	11/26/76
Murphy Exploration and Production Co.	Saltwater Disposal emergency pit overflowed	28N	51 E	10	0.00	9.5	11/23/76	11/24/76

Spill Report Summary

Exhibit 2

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Leak in connections at wellhead EPU No. 1	28N	51 E	2	2.50	0.5	12/03/76	12/03/76
Murphy Exploration and Production Co.	Leak in Wellhead connections	28N	51 E	2	1.00	2.0	12/03/76	12/06/76
Murphy Exploration and Production Co.	Pin hole leak in gathering line	29N	51 E	30	0.50	5.0	12/28/76	12/29/76
Murphy Exploration and Production Co.	Pinhole leak in 3" steel gathering line	29N	51 E	30	0.50	5.0	12/28/76	12/30/76
Murphy Exploration and Production Co.	EPU #39 3" flow line, "F" battery	28N	51 E	3	0.50	7.5	03/11/77	03/11/77
Murphy Exploration and Production Co.	Spill occurred when when corrosion caused a leak in a 3" flowline at the tank battery	28N	51 E	3	0.50	7.5	03/11/77	03/14/77
Murphy Exploration and Production Co.	Discharge from 2" flowline at the joint of well EPU #105 to tank battery	29N	51 E	30	1.00	0.0	03/24/77	03/24/77
Murphy Exploration and Production Co.	Oil spilled from a glued connection from a 2" flowline	29N	51 E	30	1.00	0.0	03/24/77	03/25/77
Murphy Exploration and Production Co.	Fire at EPU #8 salt water disposal station	28N	51E	10	0.00	0.0	01/07/85	01/08/85
Murphy Exploration and Production Co.	"A" Battery on 85 Pig trap	28N	51E	2	0.02	2.0	09/05/91	09/05/91
Murphy Exploration and Production Co.	Well EPU #39 flowline	28N	51 E	32	0.10	4.9	09/05/91	09/06/91

Spill Report Summary

Exhibit 2

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Well EPU #39 flowline	28N	51 E	32	0.75	0.8	09/06/91	09/06/91
Murphy Exploration and Production Co.	West of Well EPU#101 on "H" Battery	29N	51E	14	0.12	5.9	09/14/91	09/14/91
Murphy Exploration and Production Co.	"H" Battery 5-1/2 inch gathering line	29N	51E	14	0.07	6.9	09/16/91	09/16/91
Murphy Exploration and Production Co.	Well EPU #39 Flowline	28N	51 E	32	0.04	2.0	09/25/91	09/25/91
Murphy Exploration and Production Co.	Huber lease heater treater	28N	51E	10	0.03	3.0	10/14/91	10/14/91
Murphy Exploration and Production Co.	Sidewall split in 20,000 barrel oil tank	29N	51E	30	500.00	0.0	12/05/91	12/13/91
Murphy Exploration and Production Co.	200 yards north of "F" Battery on Well EPU #39 flowline	28N	51E	3	4.00	4.0	02/10/92	02/12/92
Murphy Exploration and Production Co.	Well EPU#85 Flowline	29N	51E	33	0.50	0.5	06/17/92	06/17/92
Murphy Exploration and Production Co.	Well EPU#12 flowline700' north from well EPU #11 on well EPU#12 & #39 flowline in road ditch	28N	51E	3	0.00	9.0	11/30/92	11/30/92
Murphy Exploration and Production Co.	Well EPU #85 Flowline	29N	51E	33	2.00	2.0	01/18/93	01/18/93
Murphy Exploration and Production Co.	Well EPU #85 Flowline	29N	51E	33	2.50	2.5	01/19/93	01/19/93
Murphy Exploration and Production Co.	30' east on Huber Battery on Huber #1 flowline	28N	51E	10	3.00	3.0	01/23/93	01/23/93

Spill Report Summary

Exhibit 2

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Well EPU#18 Flowline	28N	51 E	2	0.25	0.3	01/25/93	01/25/93
Murphy Exploration and Production Co.	South Central oil dumpline	28N	51E	10	4.00	0.0	01/30/93	01/30/93
Murphy Exploration and Production Co.	300' north from "H" Batttery on 5-1/2 inch line	28N	51E	14	2.50	2.5	02/01/93	02/01/93
Murphy Exploration and Production Co.	Well EPU #15 flowline	28N	51 E	11	0.12	0.1	02/04/93	02/04/93
Murphy Exploration and Production Co.	Well EPU #15 flowline	28N	51 E	11	0.75	0.8	02/05/93	02/05/93
Murphy Exploration and Production Co.	Well EPU #15 flowline	28N	51 E	11	0.50	0.5	02/06/93	02/06/93
Murphy Exploration and Production Co.	Huber #1 flowline 150 ' SE from Huber Battery	28N	51E	10	2.50	2.5	02/06/93	02/06/93
Murphy Exploration and Production Co.	Well EPU #18 Flowline	28N	51 E	2	2.50	2.5	03/08/93	03/08/93
Murphy Exploration and Production Co.	Well EPU #85 Flowline	29N	51E	33	1.50	1.5	03/11/93	02/11/93
Murphy Exploration and Production Co.	Flowline on #85 Pig Trap at "A" Battery	28N	51E	2	3.00	3.0	03/25/93	03/25/93
Murphy Exploration and Production Co.	Flowline on Well Huber # 4-A 350' from Huber Treater	28N	51E	10	4.50	4.5	08/14/93	08/14/93
Murphy Exploration and Production Co.	Salt water line	28N	51 E	10	0.00	0.5	10/08/93	10/08/93
Murphy Exploration and Production Co.	Well EPU #80-D salt water line	28N	51 E	10	0.00	10.0	11/18/93	11/18/93

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Well EPU #39	28N	51 E	32	0.71	8.0	01/11/94	01/13/94
Murphy Exploration and Production Co.	"H" Battery gathering line	28N	51 E	10	2.00	9.0	01/21/94	01/21/94
Murphy Exploration and Production Co.	Well EPU #6	28N	51 E	10	0.50	1.0	01/21/94	01/21/94
Murphy Exploration and Production Co.	Well EPU #57 check valve	29N	51E	27	2.00	170.0	03/08/95	03/10/95
Murphy Exploration and Production Co.	Not Specified	28N	51 E	10	0.00	10.0	05/06/95	06/12/95
Murphy Exploration and Production Co.	EPU #5 & #18 "C" battery	28N	51 E	2	0.00	1.2	05/30/95	05/31/95
Murphy Exploration and Production Co.	Salt water line to 80-D	28N	51 E	10	0.00	0.2	06/08/95	06/12/95
Murphy Exploration and Production Co.	Salt water line to well EPU #80-D	28N	51 E	10	0.00	10.0	06/15/95	06/20/95
Murphy Exploration and Production Co.	Well EPU #39	28N	51 E	3	0.24	0.7	06/22/95	06/23/95
Murphy Exploration and Production Co.	Wells EPU #55 & #104	28N	51 E	14	0.10	0.1	09/02/95	09/05/95
Murphy Exploration and Production Co.	EPU	28N	51 E	10	0.95	0.0	04/08/96	04/09/96
Murphy Exploration and Production Co.	North Central Battery Micro Switch failure	29N	51E	30	80.00	0.0	04/29/96	04/28/96
Murphy Exploration and Production Co.	"H" battery gathering line (wells EPU #100, 20, 104, 55, 101, 9)	28N	51 E	11	0.95	6.0	06/01/96	06/05/96

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Wells EPU #104 & 55	28N	51 E	14	0.01	1.0	06/17/96	07/19/96
Murphy Exploration and Production Co.	Corroded 5-1/2 inch pipeline	29N	51E	19	10.00	200.0	07/07/96	07/08/96
Murphy Exploration and Production Co.	Wells EPU #104 & 55	28N	51 E	14	0.07	4.0	07/22/96	07/22/96
Murphy Exploration and Production Co.	Well EPU #100	28N	51 E	11	0.50	3.0	12/20/97	12/20/97
Murphy Exploration and Production Co.	Well EPU #100	28N	51 E	11	0.50	5.0	12/21/97	12/24/97
Murphy Exploration and Production Co.	"C" battery salt water line	28N	51 E	2	0.00	2.0	12/29/97	12/29/97
Murphy Exploration and Production Co.	South Central 6-inch line west of well EPU#12	28N	51 E	3	0.00	5.0	01/03/98	01/03/98
Murphy Exploration and Production Co.	"F" battery	28N	51 E	3	0.00	3.0	01/06/98	01/06/98
Murphy Exploration and Production Co.	"F" battery locations	28N	51 E	3	0.00	8.0	01/09/98	01/09/98
Murphy Exploration and Production Co.	Salt water line from well EPU #8-D to #80-D	28N	51 E	10	0.00	30.0	01/22/99	01/25/99
Murphy Exploration and Production Co.	Salt water line from well EPU #8-D to #80-D	28N	51 E	10	0.00	10.0	01/25/99	01/25/99
Murphy Exploration and Production Co.	Well EPU #111 Flow line	29N	50 E	13	1.00	5.0	03/09/00	03/17/00
Murphy Exploration and Production Co.	Well EPU #111 Flow line	29N	50 E	13	0.00	1.0	03/14/00	03/17/00
Murphy Exploration and Production Co.	Corroded 3-inch pipeline at well EPU #7	29N	51E	7	0.50	7.0	03/17/00	03/22/00
Murphy Exploration and Production Co.	Well EPU #7	29N	51 E	7	0.50	7.0	03/17/00	03/17/00

Owner	Source of Spill	Township	Range	Section	Oil Spilled (barrels)	Salt Water Spilled (barrels)	Date of Spill	Date Spill Reported
Murphy Exploration and Production Co.	Deteriorated 4-inch pipeline at "C" battery	28N	51E	3	0.00	20.0	08/19/00	08/21/00
Murphy Exploration and Production Co.	Well EPU # 80-D	28N	51 E	3	2.00	300.0	04/29/01	04/29/01

CERTIFICATE OF SERVICE
Docket No.

I hereby certify that the original and a true copy of this Emergency Administrative Order was hand-carried to the Regional Hearing Clerk, EPA Region 8, 999 18th Street, Denver, Colorado, and that a true copies of the same were sent via Certified Mail Return Receipt Requested to:

Murphy Exploration & Production Company
CT Corporation System
40 West Lawrence, Suite A
Post Office Box 1166
Helena, Montana 59624-1166;

Pioneer Natural Resources USA, Inc.
CT Corporation System
40 West Lawrence, Ste A
Post Office Box 1166
Helena, Montana 59624-1166;

Marathon Oil Company
CT Corporation System
40 West Lawrence, Suite A
Post Office Box 1166
Helena, Montana 59624-1166;

Samson Hydrocarbons Company
Prentice-Hall Corporation System, Inc.
1013 Centre Road
Wilmington, DE 19805; and

Samson Investment Company
Corporation Trust Company of Nevada
6100 Neil Road #500
Reno, NV 89511.

Dated: 9/20/01

By: Judith McTernan
Judith McTernan